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GENDER AND EQUITY IN MARKET-BASED ENVIRONMENTAL PROGRAMS: CASE STUDIES FROM KENYA

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EXECUTIVE SUMMARY

Reconciling global environmental goals with local community needs has been the focus of conservation approaches for several decades now; however scant attention has been paid to the role of gendered – men's and women's - dynamics within these environmental contexts. Although well-intentioned, the tendency has been to direct practical attention to only women, which offers an inadequate account of the gender-differentiated access to, and control over natural resources. Against this background, the objective of this thesis is to analyse how formal and informal institutions interact with the design of market-based environmental programs to influence gender and equity outcomes.

Payments for Ecosystem Services (PES), a new addition to the suite of environmental conservation approaches, are market-based instruments that include "Reduced Emissions from Deforestation and Forest Degradation - plus - sustainable management of forests, conservation of forest carbon stocks and enhancement of forest carbon stocks" (REDD+). PES/REDD+ are considered promising tools that reward resource users financially or in-kind, on the condition that conservation of natural resources and/or a reduction in carbon emissions is achieved through the adoption of stipulated resource-use regulations. PES/REDD+ programs are therefore heralded for their 'win-win' potential to overcome the flaws of previous coercive state-led and community-based approaches.

PES adoption is, however, considered to be occurring at the expense of overlooking important social and institutional factors relevant for conservation outcomes. Their widespread acceptance is viewed as diverting attention away from the role of power asymmetries as well as from the question of how to implement substantial changes that sustainably reduce human pressure on ecosystems, without undermining social benefits. It is these aspects that determine equity in access to benefits and decision-making on PES, an area that is of increasing interest. Despite the growing recognition of equity in PES, gender concerns remain peripheral, and the question arises as to why this is the case. Approaches that alter resource management practices alter how men and women can interact with resources such as water, grasslands and forests, and also influence the achievement of important household welfare needs. Therefore, the marginalisation of gender concerns in conservation remains rather puzzling.

The study adopts a qualitative case study approach. Data collection tools included in-depth intra-household interviews, gender-disaggregated focus group discussions and Process Net-Map, a participatory mapping tool. The study is based on a conceptual framework that draws from various strands in the literature, including New Institutional Economics and feminist political ecology.

The case studies analyse four PES/REDD+ programs in Kenya, namely the Kitengela Wildlife Lease Program, the Mara North Conservancy, the Kasigau Corridor REDD+ Project and Imbirikani Group Ranch. The study sites host mainly pastoral and agro-pastoral communities and are adjacent to some of the most prominent protected areas in the country. The findings are presented in three papers, which are included in this cumulate thesis. The first paper adopts a process oriented approach to investigate the institutional contexts within which PES/REDD+ stakeholders emerge and influence equity outcomes; the second paper focusses on an in-depth exploration of the factors influencing gender exclusions such as gendered labour relations and property rights; and the final paper further analyzes the factors identified in the first two papers as constraining gender inclusion in PES/REDD+, and develops a framework that helps to identify context-specific gender strategies for market-based environmental programs.

The results from the first paper show that equity outcomes in land ownership, the distribution of power and participation in PES/REDD+ decision-making are the product of historical socio-political processes characterised by the interplay between formal and informal institutions. The second paper finds that the uneven distribution of land disproportionately affects women, who are systematically excluded from direct benefits despite incurring considerable - yet different costs when compared to men - often as a result of adhering to land use regulations. Land ownership alone is, however, insufficient to capture the underlying reasons for gender exclusion within the reviewed contexts. The third paper illustrates that informal institutions, such as norms, also constrain gender-balanced participation in PES/REDD+ and that the characteristics of the schemes are often an extension of the local social norms. As the context in each site was different, the proposed framework enables the analysis of gendered norms and women's agency in an effort to provide guidance for selecting suitable strategies for the promotion of gender equity in market-based conservation projects.

The thesis concludes that more attention to the historical processes leading up to PES/REDD+ establishment is required if more equitable outcomes are to be achieved. Deliberate efforts by implementing agencies that consider the multi-dimensional nature of equity can play a crucial role in addressing distributional and procedural equity, especially in contexts where land is unevenly distributed. However, as secure land tenure is not the only determinant of equity outcomes, the study advocates for a nuanced understanding of gendered norms in an effort to contribute to selecting suitable gender strategies for PES/REDD+ programs. Ultimately, greater effort is also required to challenge prevailing—yet flawed—gender discourses if participation in, and benefits from PES/REDD+ are to become more gender balanced.

ZUSAMMENFASSUNG

Globale Umweltziele mit den Bedürfnissen lokaler Bevölkerungsgruppen in Einklang zu bringen ist seit mehreren Jahrzehnten ein Schwerpunkt in der Entwicklung neuer Umweltschutzkonzepte. Als besonders aussichtsreich werden dabei Markt-basierte Instrumente betrachtet, insbesondere Zahlungen für Umweltleistungen (*Payments for Environmental Services – PES*). PES sind Instrumente, mit denen Ressourcennutzer für die Erhaltung natürlicher Ressourcen und/oder die Reduzierung von Kohlendioxid-Emissionen finanziell oder in Form von Sachleistungen entlohnt werden. PES wird oft als ein „win-win" Konzept angesehen, welches das Potential besitzt, die bekannten Defizite der bisherigen staatlichen oder gemeinschafts-basierten Umweltschutz-Ansätze zu überwinden. Ein prominentes Beispiel für PES ist das internationale Klimaschutzprogramm REDD+, das eine Reduzierung der durch Entwaldung verursachten Emissionen anstrebt und zur Erhaltung und Erhöhung der Kohlenstoffbestände in Wäldern sowie zur nachhaltigen Waldbewirtschaftung beitragen soll. (REDD+ steht für *"Reduced Emissions from Deforestation and Forest Degradation - plus - sustainable management of forests, conservation of forest carbon stocks and enhancement of forest carbon stocks"*)

Der Bedeutung von Geschlechterrollen ist im Kontext solcher Markt-basierter Instrumente bislang nur wenig Aufmerksamkeit gewidmet worden. Zuletzt wurde das Augenmerk auf die Rolle der Frauen gelenkt, was trotz positiver Absichten nur eine unzureichende Berücksichtigung der geschlechterdifferenzierten Fragen bezüglich des Zugangs zu und der Kontrolle von natürlichen Ressourcen darstellt. PES Programme beeinflussen, wie Männer und Frauen natürliche Ressourcen wie Wasser, Weideland und Wälder nutzen können, und welche Wohlfahrtseffekte sich, je nach Ausgestaltung der Zahlungsströme aus PES Programmen und ihrer Verteilung innerhalb des Haushalts ergeben. Dazu ist es entscheidend, die formalen und informellen Institutionen zu berücksichtigen, die einerseits den geschlechterdifferenzierten Zugang zu natürlichen Ressourcen und andererseits die Ressourcenverteilung innerhalb des Haushalts bestimmen. Vor diesem Hintergrund ist es das Ziel der vorliegenden Dissertation, zu analysieren, wie sich formale und informelle Institutionen in Interaktion mit dem Design von PES/REDD+ Programmen auf die soziale Gerechtigkeit auswirken, wobei die Frage der Gleichstellung der Geschlechter im Mittelpunkt steht.

Die Dissertation setzt bei der Erkenntnis an, dass in PES Programmen soziale und institutionelle Faktoren oft übersehen werden. Die verbreitete Akzeptanz von PES birgt die Gefahr, bestehende Machtasymmetrien zu ignorieren und von der Frage abzulenken, welche grundlegenden Veränderungen nötig und möglich sind, um eine Belastung der Ökosysteme nachhaltig reduzieren, ohne dabei die soziale Gerechtigkeit zu unterminieren und sozial benachteiligte Gruppen zu ignorieren oder noch schlechter zu stellen. Diese Aspekte sind wesentlich, um in PES Programmen einen gerechten Zugang zu Zahlungsleistungen und eine gerechte Entscheidungsfindung über deren Ausgestaltung zu erreichen, ein Bereich, der mit Blick auf Armutsbekämpfung zunehmend an Interesse gewinnt. Dabei stellt sich allerdings die Frage, warum trotz des gestiegenen Interesses an Gerechtigkeitsfragen in PES Programmen die Gleichstellung der Geschlechter bisher nur wenig beachtet worden ist.

Die vorliegende Dissertation befasst sich mit diesen Forschungslücken und benutzt dazu den Ansatz der vergleichenden qualitativen Fallstudien. Methoden der Datenerhebung umfassten Tiefeninterviews innerhalb von Haushalten, nach Geschlechtern getrennte Fokusgruppendiskussionen und Prozess „Netmaps“ –eine partizipative Forschungsmethode, mit der soziale Beziehungen und Machtgefälle visualisiert werden. Die Forschung wurde auf der Basis eines konzeptionellen Analyserahmens durchgeführt, in dem ausgewählte Literatur verschiedener Wissenschaftsstränge kombiniert wurde, einschließlich der Neuen Institutionenökonomie und der Feministischen Politischen Ökologie. Der Analyserahmen wurde in einer sozialkonstruktivistischen Perspektive angewandt. Die Fallstudien befassten sich mit vier PES/REDD+ Projekten in Kenia: dem Kitengela Wildlife Lease Program, der Mara North Conservancy und der Imbirikani Group Ranch, drei Projekten in denen aus Tourismus-Einnahmen Zahlungen für Naturschutz (insbesondere Wildtiere) geleistet werden und dem Kasigau Korridor REDD+ Projekt. Auf der Imbirikani Group Ranch befand sich außerdem ein Programm für Zahlungen für Klimaschutzleistungen in Planung. Die Auswahl dieser Fallstudien zielte darauf ab, Geschlechtergerechtigkeit in PES/REDD+ Systemen empirisch zu erforschen und die dabei generierten Informationen zur Verbesserung der Konzeption und Umsetzung solcher Projekte in Kenia nutzbar zu machen.

Die Dissertation ist kumulativ angelegt und umfasst drei Artikel. Der erste Artikel arbeitet mit einem prozessorientierten Ansatz, mit dem der institutionellen Kontext untersucht wird, in dem

PES/REDD+ Interessengruppen entstehen. Der zweite Artikel setzt den Schwerpunkt auf die Analyse der Faktoren, die geschlechtsbedingte Ausgrenzungen in PES Programmen beeinflussen, wobei insbesondere die Faktoren Eigentumsrechte and natürlichen Ressourcen und Arbeitssteilung in pastoralen Tierhaltungssystemen betrachtet wurden. Der dritte Artikel entwickelt unter Berücksichtigung der Erkenntnisse des ersten und zweiten Artikels ein Konzept, mit dem die Identifizierung kontextspezifischer Gender-Strategien für PES/REDD+ Programme verbessert werden kann.

Die Ergebnisse des ersten Artikels zeigen auf, das die Auswirkingen von PES/REDD+ Programmen auf Gleichstellung der Geschlechter bezüglich Zugang zu Land, Machtverteilung und Teilhabe an der Entscheidungsprozessen sehr stark bedingt sind durch historische gesellschaftspolitischen Prozesse und das Zusammenspiel formeller und informeller Institutionen. Der zweite Artikel zeigt auf, dass Frauen besonders stark von den durch die Landnutzungsvorschriften entstehenden Kosten bzw. Einnahmeverlusten betroffen sind, jedoch auf Grund der bestehenden Gender-Normen und ihrer mangelnden Berücksichtigung in PES Programmen systematisch von den direkten Vorteilen der geleisteten Zahlungsströme ausgeschlossen werden. Der Artikel zeigt auch auf, dass ein Fokus auf Landbesitz unzureichend ist, um die zugrunde liegenden Ursachen für geschlechtsspezifische Ausgrenzungen in den untersuchten Fällen angemessen zu erklären. Der dritte Artikel legt den Schwerpunkt darauf, aufzuzeigen, wie informelle Institutionen, z.B. soziale Normen, eine ausgewogene Beteiligung der Geschlechter an PES/REDD+ Programmen einschränken. Der Artikel macht deutlich, dass die Ausgestaltung der Programme oft eine Erweiterung der lokalen sozialen Normen darstellt. Die Ergebnisse weisen darauf hin, dass sich lokale soziale Normen bezüglich der Geschlechterrollen stark unterscheiden können, weshalb PES/REDD+ Programme kontext-spezifische Lösungsansätze entwickeln müssen. Um die Identifikation solcher Lösungsansätze zu erleichtern, entwickelt der Artikel auf der Basis der empirischen Erkenntnisse einen Analyserahmen, der geschlechtsspezifischer Normen und sich daraus ergebenden geschlechtsspezifischen Handlungsmöglichkeiten in den Mittelpunkt stellt.

Die Dissertation kommt zu dem Schluss, dass mehr Aufmerksamkeit auf die historischen Prozesse, die den aktuellen Ressourcenzugang bestimmen, gelegt werden muss, um mehr soziale Gerechtigkeit einschließlich Geschlechtergerechtigkeit in PES/REDD+ Programmen zu

erreichen. Um sowohl Verteilungsgerechtigkeit als auch Prozessgerechtigkeit zu erreichen, sind gezielte Bemühungen der durchführenden Organisationen notwendig, die verschiedenen Dimensionen der Gerechtigkeitsfrage zu berücksichtigen, insbesondere in Situationen, in denen Zugang zu Land sehr ungleich verteilt ist. Die Dissertation zeigt aber auch, dass Grundbesitzverhältnisse nicht alleine ausschlaggebend für ungerechte Resultate in PES/REDD+ Programmen sind. Daher setzt sich die Studie auch für ein differenziertes Verständnis der sozialer Normen ein, um einen Beitrag zur Wahl geeigneter Gender-Strategien in PES/REDD+ Programmen zu erreichen. Die Studie weist auch darauf hin, das größere Anstrengungen erforderlich sein, die bestehenden gesellschaftlichen Diskurse über Geschlechterrollen zu hinterfragen, um mehr Geschlechtergerechtigkeit in PES/REDD+ Projekten zu erreichen.

LIST OF ABBREVIATIONS

AMREF	African Medical Research and Education Foundation
CBC	Community-based Conservation
CBNRM	Community-based Natural Resource Management
CBO	Community-based Organisations
CCBA	Climate Community and Biodiversity Alliance
DAC	Directed Agricultural Companies
EGI	Environment and Gender Index
ES	Ecosystem Services
FAO	United Nations Food and Agroculture Organisation
FE	Feminist Environmentalism
FGD	Focus Group Discussion
FPE	Feminist Political Ecology
FPIC	Free Prior and Informed Consent
GAD	Gender and Development
GD	Group Discussions
GDP	Gross Domestic Product
GHG	Green House Gas
GTA	Gender Transformative Approach
HH	Household
HWC	Human Wildlife Conflict
ICDPs	Integrated Conservation and Development Programmes
IGR	Imbirikani Group Ranch
IUCN	International Union for the Conservation of Nature
KCRP	Kasigau Corridor REDD+ Project
KES	Kenya Shillings
KII	Key Informant Interview
KWS	Kenya Wildlife Service
LCC	Locational Carbon Committee
MNC	Mara North Conservancy
NGO	Non-Governmental Organisation

NRM	Natural Resource Management
PAs	Protected Areas
PES	Payments for Ecosystem Services
POA	Park Outreach Approaches
REDD	Reduced Emissions from Deforestation and Forest Degradation
REDD+	Reduced Emissions from Deforestation and Forest Degradation, plus forest conservation, sustainable management of forests, and enhancement of carbon stocks
TEEB	The Economics of Ecosystems and Biodiversity
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollars
VCS	Voluntary Carbon Standards
WED	Women Environment and Development
WID	Women in Development
WLP	Kitengela Wildlife Lease Program

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1 INTRODUCTION

This thesis explores the equity dimensions of four market-based conservation schemes in Kenya. The study investigates the role of institutional and gendered dimensions within the selected cases in an attempt to highlight their importance for designing and implementing equitable conservation schemes. In this introduction, the Problem Statement and Background are presented together with the Objectives of the Study. This is followed by the Conceptual Framework and Literature Review which encompass (i) key aspects of equity, (ii) an overview of the evolution of conservation approaches; and (iii) the role of gender and environmental links and (iv) a description of the conservation context in Kenya. The Methodology is then presented under which an overview of the study approaches and context is described.

1.1 Problem Statement and Background

Gender inequality is considered one of the most pervasive examples of social inequality, especially in relation to unequal property rights and bargaining power in various socio-political contexts (Nyamu-Musembi 2006; Whitehead, A. & Tsikata 2003; Meinzen-Dick et al. 1997; Meinzen-Dick & Mwangi 2009; Lastarria-Cornhiel 1997; Agarwal 1997; Quisumbing & Pandolfelli 2010). While gender is well recognised as a key variable and aspect of social differentiation in the sectors of agriculture and development, it remains largely marginalised from dominant discourses and the practice of environmental conservation (Blaikie 2006; Corbera, Kosoy, et al. 2007a; Silvestri et al. 2012; Bedelian 2014). Why this is the case remains less clear when compared to gender research in agriculture and development.

Gender exclusion from conservation is puzzling because the dynamic relations between men and women are what condition access to, and management of the natural resources under conservation, such as grasslands, rivers and forests (Russell & Vabi 2013; Verma 2014; Rocheleau & Edmunds 1997; Rocheleau 1995). As formal institutions for environmental governance transition from protectionist and exclusionary, to more inclusive and/or market-based approaches, acknowledging the roles of men and women as part of the same conservation landscapes has never been more critical (Schneider 2013; Hunter et al. 2011; Leach 2006; Agarwal 1997). Therefore, adopting an equity approach to seek a better understanding of the gendered and institutional dimensions of market-based approaches forms the main motivation and subject area for this thesis.

Among the most recent approaches for environmental management is Payments for Ecosystem Services (PES). PES are market-based instruments, which include Reduced Emissions from Deforestation and Forest Degradation, plus forest conservation, sustainable management of forests, and enhancement of carbon stocks (REDD+). PES including REDD+ have gained substantial prominence in discussions on natural resource management (NRM) and are considered a promising conservation tool (Thompson et al. 2011). Crucial services for human survival are delivered by ecosystems and include provisioning, regulating, and cultural services (Millennium Ecosystem Assessment 2005). Combined, these services provide vital benefits including food, fibre, clean water, clean air and recreational services like ecotourism. Heralded for improving the efficiency and effectiveness of NRM, PES provide financial or other benefits to resource-users to ensure the continuation or improvement of these important ecosystem services (Pagiola et al. 2005; Ingram et al. 2014).

According to The Economics of Ecosystems and Biodiversity (TEEB), market-based approaches represent a form of valuing natural capital such as forests, grasslands and wetlands, and the ecosystem services supplied by this capital (Sukhdev et al. 2010). Under PES, the conservation and restoration of the resources that provide these benefits are assigned a monetary value which - in principle - is channelled to resource-users or land managers as incentives generated through markets (Wunder 2007; Engel et al. 2008). These incentives are transferred only on condition that appropriate land-use practices are adopted, thus ensuring the provision of ecosystem services (Wertz-Kanounnikoff & Locatelli 2011; Wunder 2005; Landell-mills & Porras 2002; Pascual et al. 2010; Pagiola et al. 2005). PES mechanisms therefore differ from conventional state and community-led conservation approaches because they (i) are a voluntary transaction that, (ii) compensate or reward resource managers to promote conservation; (iii) only on condition that appropriate practices are adopted (Wunder, 2015). Combined, these features are claimed to overcome the flaws of state-led fortress conservation and decentralised approaches, such as Integrated Conservation and Development Programmes (Ferraro & Kiss 2002).

The attractiveness of market-based approaches for conservation with the potential to offer co-benefits has earned these approaches the label ‘win-win’ (Muradian et al. 2013; Miles & Kapos 2008; Bulte et al. 2008) consequently receiving tremendous government, non-government and private sector support (Ferraro & Kiss 2002). The lure to adopt PES is supported for various critical reasons. One reason is the potential to internalise environmental externalities (Pascual et al. 2010). In an era where (human-induced) biodiversity losses

continue to occur at an alarming and unprecedented rate, more effective and innovative approaches to protect the habitats such as those hosting forest and wildlife biodiversity are demanded (Sala et al. 2011; Larsen et al. 2011; Turner et al. 2009). A second and related reason for PES adoption is its potential to offer social and economic benefits (co-benefits). Due to the concerning overlaps between species richness, high poverty incidence and weak governance structures (McShane et al. 2011), mechanisms that fail to address the local-level dimensions influencing biodiversity losses are deemed inadequate. Critical habitats provide a wealth of benefits for local resource-users (FAO 2014), so the provision of co-benefits to manage (or restrict) resource use is highly attractive.

The greatest challenges in biodiversity conservation today are therefore embedded in attempts to create or re-design institutional arrangements that bridge global conservation objectives and local welfare needs (Dickman et al. 2011). Evidence that PES actually can deliver cost-effective conservation outcomes while delivering co-benefits is also emerging (Wunder 2008; Pagiola et al. 2005; Zilberman et al. 2008; Antle & Stoorvogel 2008; Ingram et al. 2014). The literature implies that under certain institutional conditions, PES can meet joint environmental and socio-economic goals. PES has been found to have an income-smoothing effect for poor resource users enduring adverse climatic conditions, provide alternative sources of income, increase economic assets and wealth and human capital and skills (Paavola & Adger 2006; Vatn 2010; Pagiola et al. 2005; Wunder 2008; García-Amado et al. 2011; Pagiola 2008; Homewood et al. 2009; Reto-O-Reto 2006; Shames, Wekesa, et al. 2012; Osano, Said, Leeuw, et al. 2013; Turpie et al. 2008; Grieg-Gran et al. 2005; Rosa & Kandel 2004). After decades of flawed conservation approaches,[1] market-based mechanisms therefore offer a much needed ray of hope.

It is increasingly becoming evident however, that the extent to which PES can address local and global complexities depends not only on formal institutions such as legal frameworks and land/resource tenure, but also and importantly on informal institutions such as traditional norms and customs (Corbera et al. 2009; García-Amado et al. 2011; Chen et al. 2009; Berbés-Blázquez et al. 2016; Kinzig et al. 2013). Collectively, these critiques encourage the advancement of conservation thinking to move beyond the global symptoms of biodiversity

[1] This is not however to say that conservation efforts have failed entirely. Pimm et al (2014) show that "the rate at which mammals, birds, and amphibians have slid toward extinction over the past four decades would have been 20% higher were it not for conservation efforts. "

loss (such as wildlife poaching and deforestation) and *towards* efforts to identify the underlying causes undermining conservation efforts to begin with (Di Gregorio et al. 2013).

Despite evidence of PES' 'win-win' potential, attention to gender – which is an important social category of differentiation – is minimal (Bedelian 2014; Silvestri et al, 2013). To date, women's participation in PES schemes is seldom encouraged unless under stipulated regulations (as is the case in REDD+). It follows that gender consideration in PES research continues to be limited (Kaudia & Obonyo 2007; IUCN, 2011). A literature review of 200 references of PES schemes noted that less than five percent dealt with gender-specific aspects or impacts of PES (Ravnborg et al. 2007). While to some extent, there are exceptions (Shea et al. 2005; World Bank 2010), evidence of gender integration and analyses is elusive in spite of repeated claims of the role of men *and* women in managing vital natural resources (Russell & Vabi 2013; Verma 2014; Rocheleau & Edmunds 1997; Rocheleau 1995). Analyses of how participation in PES can enable or constrain gendered relations of production have been largely overlooked (Wertz-Kanounnikoff & Locatelli 2011). Although few, recent publications reveal that PES/REDD+ exacerbate gender inequalities regarding the distribution of ecosystem service benefits and costs between men and women due to the neglect of a historical understanding of power relations (Berbes-Blazquez et al_2016) and misguided assumptions regarding gender relations (Westholm and Arora-Jonsson, 2015). Based on existing knowledge, Gurung et al (2010) warn that failure to integrate gender issues into the design and implementation of particularly forestry related PES schemes may threaten the long term sustainability of projects and therefore undermine the success of initiatives.

The gender knowledge gap is particularly alarming for two reasons. First, women, like men form an integral component of the resource-rich but resource-threatened rural landscapes where many PES schemes are implemented (Schneider 2013). The relations of production that condition gendered resource use may be altered under PES/REDD+ land-use regulations, and may therefore influence the achievement of important household welfare needs (Russell & Vabi 2013). Secondly, adopting a gendered lens is particularly relevant within the context of the gender asset gap. The gender asset gap refers to the differences between men's and women's ability to access, control, own, and dispose of different kinds of productive assets necessary to secure stable livelihoods (Meinzen-Dick et al. 2011; Johnson et al. 2015). The concept of the gender asset gap introduces a new dimension regarding men's and women's abilities to adapt to the rules and regulations stipulated under market-based schemes. Conservation approaches that offer financial benefits may widen the gender asset gap and can

weaken men's and / or women's ability to manage shocks and stresses (Okali & Naess 2013; Arora-Jonsson 2011), of which women are often reported to be more vulnerable to than men (Aboud 2011). Thirdly, PES regulations and the introduction of new income streams may result in a reconfiguration of gender relations, as has been demonstrated by previous conservation approaches (Nabane et al. 1994; Nabane 1996; Songorwa 1999). Given women's significant income and labour contribution to the achievement of food security and other household welfare outcomes, understanding how PES influences gender relations is important if PES is to address the needs of all resource users – and seek equitable outcomes.

A gendered approach can therefore inform the design of options to ensure that the cost of meeting PES-related objectives does not undermine the achievement of household welfare outcomes and/or expand the gender asset gap and should therefore form a meaningful component of the PES and conservation agenda.

1.2 Study Objectives

Given these critical knowledge gaps and the context described above, the aim of this study is to analyse how formal and informal institutions interact with the design of PES/REDD+ programs to influence gender and equity outcomes. . Firstly, the thesis aims to explore the local institutional context within which PES/REDD+ emerges in Kenya. Understanding the formal and informal institutional conditions under which market-based approaches are designed and implemented is expected to provide rich insight into the benefit-distribution and decision-making mechanisms that influence important aspects of (gender) equity. The second aim addresses the question of why market-based approaches are gender-blind and proposes a framework through which gender integration may be implemented. As PES are a relatively new addition to the mosaic of conservation approaches in Kenya, the thesis is based on four case studies conducted across three districts.

Specific Research Objectives

Specifically, the study sought to:

1) Identify the institutional context within which PES/REDD+ actors emerge and interact to influence procedural and distributional equity outcomes.
2) Establish the underlying factors for gender bias in PES/REDD+ schemes.
3) Develop a framework to guide the integration of gender in PES/REDD+ schemes.

Research Questions

Three broad research questions were formulated to meet the specified objectives and the outputs constitute the three chapters presented in this thesis. Due to the nature of qualitative research, a variety of follow up questions emerged, details of which are illustrated in the subsequent papers and can be referred to in the Appendices. A summary of the objectives as outlined above, the corresponding research questions and the outputs according to each chapter in the thesis is presented below (Table 1).

Table 1: Summary of research objectives, questions and outputs

Research Objectives	**Research Questions**	**Research Outputs (Chapters)**
1. Identify the institutional context within which PES and REDD+ actors emerge and interact to influence procedural and distributional equity outcomes	What were the processes that led up to PES/REDD+ establishment with regards to the distribution of power; how did these influence current equity outcomes in PES /REDD+?	Chapter 2: Equity outcomes in two PES schemes in Kenya
2. Establish the underlying factors for gender bias in PES /REDD+ schemes	To what extent and why are PES/REDD+ gender biased in Kenya?	Chapter 3: Are Market-Based Conservation Schemes Gender-Blind? A Qualitative Study of Three Cases From Kenya
3. Develop a framework to guide the integration of gender in PES/REDD+ schemes	How do local norms influence gendered relations of production and how can these be integrated to improve gender equitable outcomes in PES/REDD+?	Chapter 4: A Framework for the Integration of Gender in PES/REDD+

1.3 Conceptual Framework and Literature Review

The following section presents the framework within which this thesis was conceptualised. As Section 1.1 highlights, there is an important knowledge gap with regards to gender equity in PES/REDD+ schemes. The objective of the study is therefore to contribute towards reducing this knowledge gap by identifying the context within which PES/REDD+ schemes emerge. The intention of exploring the institutional contexts is two-fold. Firstly, an

institutional perspective allows for a better understanding of the conditions under which (in)equitable outcomes more broadly are arrived at in PES/REDD+. Both informal and formal institutions influence how and why PES/REDD+ are formulated and implemented. Secondly, identifying how institutions shape various factors (gendered relations in NRM) such as property rights and divisions of labour helps in determining the degree to which PES/REDD+ is gender equitable. The conceptual framework also seeks to capture gendered relations in NRM in more depth through an analysis across embedded scales which are often influenced by environmental conditions.

So far, while gender integration in equity-related research on PES is limited, the equity approach in PES/REDD+ has been applied to i) develop alternate conceptual frameworks (Muradian et al. 2010; Pascual et al. 2010); ii) programme evaluations (see García-Amado et al. 2011), 2010 in Mexico); iii) capture local perceptions and acceptance of PES - an important precondition for long-term success (Sommerville et al. 2010); iv) identify entry points for the poor to participate in PES contracts and reduce their obstacles to participation (Pagiola et al. 2005; Pagiola 2008); and v) balance environmental, economic and poverty reduction goals (Adhikari & Boag 2012; Schomers & Matzdorf 2013).

An overall description of the conceptual framework is provided first. A detailed description of the framework's key components and their links is then presented together with the relevant literature that informs each of the respective sections. While the literature provides specific information regarding the factors of interest in this study, the literature rarely explicitly refers to gender relations within the context of PES/REDD+ - the latter of which forms a central objective of the thesis. It is important to note that throughout the descriptions there are concepts that overlap across categories. The overlapping of concepts provides an indication of the highly interconnected nature of this study and highlights that no individual category is mutually exclusive.

1.3.1 Overview of the Conceptual Framework

The framework illustrated in Figure 1 seeks to guide an analysis of the main themes of the research; namely, institutions, gender relations and equity outcomes and their interconnections. The approach adopted by this thesis therefore represents a systematic combination of the three important components for analysis; i) the formal and informal institutional contexts within which PES/REDD+ schemes emerge (Box A); ii) the relationship between these institutional contexts and aspects of gender relations across

different scales (inter and intra household, as well as community) (Box B); and iii) the overall equity outcomes with regard to gender and also equity more broadly (Box C). The conceptual framework incorporates various feedback loops to represent the dynamic relationships between the institutional contexts, PES/REDD+ actors, and gendered relations of production through which equity outcomes are reinforced and/or transformed. Figure 1 offers an illustration of the conceptual framework as described above.

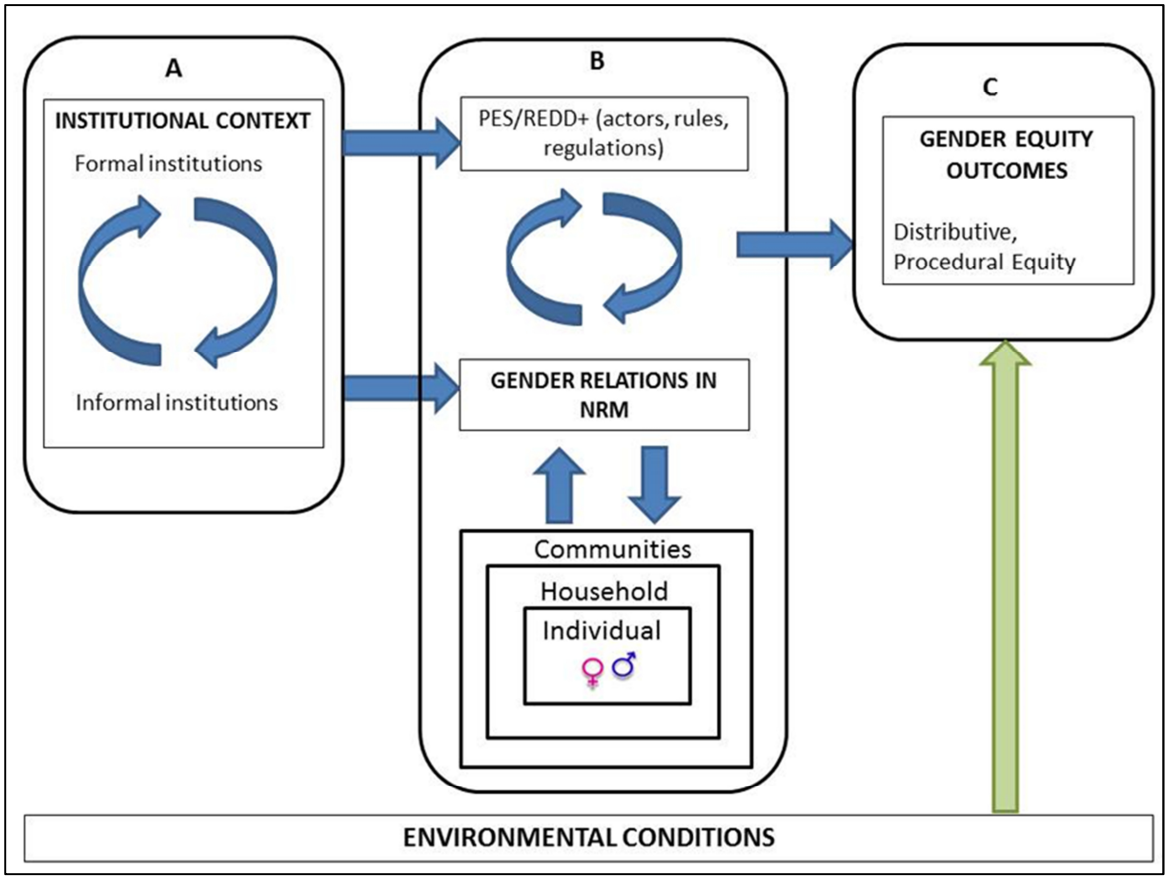

Figure 1: Gender equity in PES and impacts relationship with the achievement of welfare outcomes

(Adapted from McDermott et al. 2013)

To better explain the main themes in the conceptual framework, below is a detailed description of the principle categories. As equity represents the main evaluative criteria in this thesis, its detailed description is presented first. This is followed by an explanation for why equity in PES/REDD+ is of central importance for the study. The remaining two components of the conceptual framework are subsequently described in Sections 1.5, 1.6 and 1.7.

1.3.2 Three Dimensions of Equity

Equity represents the main evaluative criteria under this conceptual framework and is illustrated here by Box C. Equity is a social and moral concept suitably captured by Ghandi through the statement "an eye for an eye will only make the whole world blind". Closely related to perceptions of 'fairness' which move beyond concepts of 'equality', the concept of equity takes account of the unequal playing fields that influence human behaviour. Specifically, equity takes "into consideration whether a judgement rendered is commensurate to the crime committed" (McDermott et al, 2013). For example, should livestock keepers be persecuted for killing 'problem' wildlife in an attempt to reduce further livelihood threats (Treves et al. 2006)? Should women face backlash for pursuing educational ambitions if incompatible with local customs?

Equity is multi-dimensional and comprises of different, but related categories highlighting the relevance for and applicability of this concept to the study of gender in PES. Specifically, a comprehensive account of equity represents the combination of factors that determine (i) the degree to which groups and individuals are recognised, and participate in decisions affecting their welfare (procedural equity) (ii) the extent to which costs and benefits are distributed (distributional equity) and, (iii) the conditions under which individuals and groups are limited and/or enabled to access important resources (contextual equity) (McDermott et al. 2013) . Therefore, the local perceptions of gender equity outcomes in this thesis will be evaluated largely along these criteria.

Procedural Equity

Procedural equity "entails recognising the rights of all people, including those marginalized through social exclusion, to actively participate in decision making processes (Di Gregorio et al. 2013). Hinged on concepts of 'democratic decision-making', procedural equity is characterised by accountability and responsiveness with respect to local citizens. Theoretically this requires meaningful recognition, inclusion, representation and participation in the decision-making of stakeholders with regards to design, administration and conflict resolution (Fraser, 2009; Schlosberg, 2007 in McDermott et al. 2013).

There are various provisions to promote procedural equity, especially in REDD+ where seeking Free Prior and Informed Consent (FPIC) reflects good practice with respect to interactions with resident communities. Other provisions to promote procedural equity in PES include minimal guarantees of equal basic rights in decision-making and judicial processes,

and affirmative action favouring marginalised resource users, such as women, the landless and ethnic minorities (McDermott et al. 2013). Examples of procedural equity in carbon PES schemes have been documented by Corbera et al. (2007) and form the basis of REDD+ regulations. However, the main challenge faced in the integration of procedural equity is to create mechanisms which grasp the local complex dynamics (that will influence and be influenced by the marketization of ecosystem services (Adhikari & Boag 2012).

Distributive Equity

Distributive equity refers to the allocation of costs, risks and benefits resulting from schemes like PES that provide incentives for households to change land management practices. The aspect of incentives raises questions with regard to whether opportunity costs compensate for costs of forgone land uses, as the livelihoods of resource users could be adversely affected under PES/REDD+ regulations (Adhikari & Boag 2012). Distributive equity can be evaluated across the principles of equality, social welfare, merit and need (McDermott et al. 2013). Merit and need for example, are increasingly being applied to achieve distributive equity in forestry schemes (see Vyamana, 2009 on forests in Tanzania cited in McDermott et al. 2013). However, this thesis adds a unique contribution via a focus on equity in the gendered distribution of costs and benefits through differences in intra household divisions of labour, access to and control over resources and PES benefits.

The thesis gives high importance to local and gendered perceptions of distribution for various reasons. Firstly, local perceptions and acceptance of PES programmes can determine success or failure (see Sommerville et al. 2010 on a biodiversity PES schemes in Madagascar and Gross-Camp et al. 2012) of PES/REDD+ schemes; secondly, gendered differences in perceptions reflect the relative strength between written laws and unwritten norms and therefore highlight power asymmetries and the 'uneven playing field' (Pascual et al, 2014; Westholm and Arora-Jonsson, 2015; Berbés-Blázquez and Pascual, 2016). However, distributive theories are criticised for ignoring the factors that construct inequity in the first place (Fraser, 2009; Schlosberg, 2007 cited in McDermott et al. 2013). Therefore, understanding the third component of equity – contextual equity – plays an important role in explaining both distributive and procedural (in)equity.

Contextual Equity

Contextual equity (captured in Figure 1 as the institutional context) refers to the initial social conditions and the level and kind of inequity that is present at the start of the PES/REDD+ scheme (McDermott et al. 2013). The main idea behind contextual equity is that wealth and power imbalances produce asymmetries in capabilities thereby distorting attempts to achieve procedural and distributive equity. Understanding the pre-existing conditions under which men and women benefit from resource distributions – and which facilitate or constrain their capacity to do so can therefore help the design of more equitable institutional frameworks (Tacconi et al. 2013; McDermott et al. 2013) . The socially constructed establishment of new property rights and markets under PES schemes tend to be defined by those with more negotiating power, therefore reinforcing a particular social order (Vatn 2010). When using local and external institutions to manage collective PES contracts, or for coordinating individual contracts, understanding (and making provisions for) contextual (in)equity may positively influence institutional arrangements (Mahanty et al. 2013).

The thesis is particularly interested in applying an equity approach to PES/REDD+ because it is often not clear if equitable outcomes *can* be achieved under PES/REDD+. This section therefore turns to the existing literature which describes the theoretical underpinnings of PES/REDD+ and the current debates regarding the extent to which market-based mechanisms can meet environmental and societal goals equitably.

1.3.3 PES and REDD+: Is equity an overshadowed objective?

"[Neoliberal conservation reflects an] ideology that aims to subject political, social, and ecological affairs to capitalist market dynamics"

Bram Büscher et al. (2012: 5).

PES are among the newest additions to the suite of conservation approaches practiced today. PES are defined by Wunder (2015) as (a) voluntary transactions (b) between service users and (c) service providers (d) that are conditional on agreed rules of natural resource management (e) for generating offsite services. There are different types of PES, and PES-like schemes (see Derissen & Latacz-Lohmann, 2013 on a review of PES definitions) that adopt characteristics from different approaches (Wunder et al. 2008; Engel et al. 2008), including those that trade in one or more of the following ecosystem services: carbon, water, biodiversity and scenic / landscape beauty. In particular, ''REDD+'' is a subset of PES and

represents a mechanism created under the United Nations Framework Convention on Climate Change (UNFCCC) for Reducing [carbon] Emissions from Deforestation and Degradation and forest enhancement. With regards to equity, what distinguishes REDD+ from PES is a focus on the sustainable management of forests for multiple non-carbon benefits and an adherence to adopting social safeguards to reflect principles of good environmental governance (McDermott et al. 2013).[2]

PES rests on the philosophy of 'neoliberal' conservation and compared with alternate approaches, represents a form of environmental governance[3] that reconfigures the roles and influence of key actors. Neoliberal approaches prioritise markets and reduce, but do not entirely eliminate the power of the state in meeting conservation (and development) outcomes. Therefore, privatisation, marketization, re-regulation and deregulation (the reduction in the power and reach of the state) are the main characteristics of neoliberal approaches (Castree 2008). Unlike previous approaches, market-based conservation exercises a hybridised form of governance (Lemos & Agrawal 2006) where conservation planning and benefits are distributed between multiple actors including state, private, non-governmental organisation (NGO) and communities (Igoe & Brockington 2007). Through the constellation of various actors, and according to neoliberal thinking, the market governance structure is critical to ensure conservation, without which the survival of habitats and species is undermined (McAfee 1999a). Neoliberal proponents argue therefore that "unfettered markets are the best mechanisms for allocating goods and services within society" (Wilshusen 2010).

The neoliberal philosophy is underpinned by a realisation that the availability of finite and fragile resources is threatened by poor economic recognition of the widespread benefits of their sustainable management (Grieg-Gran et al. 2005).[4] Neoliberal philosophy therefore argues that as long as market failure persists, trees for example, will continue to be worth more cut down than they are standing; wildlife, worth more dead than alive, and the important ecological, economic and socio-cultural services that ecosystems provide will continue to diminish (Gómez-Baggethun et al. 2010). Various examples from the literature

[2] REDD+ "was formally introduced into the United Nations Framework Convention on Climate Change (UNFCCC) under the Bali Action Plan in 2007, following the realization that deforestation and forest degradation account for an estimated 15-20% of global Green House Gas (GHG) emissions (United Nations Framework Convention on Climate Change (UNFCCC), 2007)".
[3] Environmental governance refers to "the set of regulatory processes, mechanisms and organizations through which political actors influence environmental actions and outcomes" (Lemos & Agrawal 2006).
[4] The need to create a market which provides financial, as well as social incentives to promote ecosystem service provision is increasingly being explored and implemented.

justify the need for a market-based approach. According to Turner et al. (2009), global habitat destruction is estimated to cost US $2 trillion – 5 trillion annually in lost ecosystem services such as water and carbon storage, which amounts to more than the cost of sustainably managing the habitats that provide those services. Across various ecosystems in Africa, dramatic biodiversity declines have been recorded, particularly for large mammals (Craigie et al. 2010; Ogutu et al. 2014). Norton-Griffiths & Said (2009) show that habitat alteration through changing land uses limit the achievement of conservation objectives costing communities and nations millions of Dollars in lost revenues from nature-based tourism. These examples illustrate that although ecosystem services are vital for livelihoods and human welfare (Millennium Ecosystem Assessment 2005), the natural capital that ensures service provision is often uncompetitive when compared to other uses – which comes at the expense of biodiversity loss (Jackson et al. 2001; Food and Agriculture Organisation (FAO) 2011b). Therefore, unless market-oriented mechanisms are in place, the unsustainable use of natural resources is expected to lead to the erosion of ecosystem services which may have irreversible consequences on biodiversity conservation and negative consequences on agricultural production, food security and the capacity to cope with and adapt to climate shocks. The role of equity under the neoliberal philosophy may be marginalised and complex but highly necessary. Given the above description, the following section reviews the existing debates regarding the extent to which equitable outcomes can be achieved under PES/REDD+.

1.3.4 Are Equitable Outcomes Achievable Under Market-based Approaches?

Proponents of market-based approaches endorse the potential for PES to meet environmental and economic/societal objectives. While some evidence supports win-win claims (Grieg-Gran et al. 2005; Wunder et al. 2008; Osano et al. 2013) recent findings reveal that only under certain conditions can this potential be leveraged. Wunder (2013) argues for example, that joint outcomes can be achieved under the conditions of a robust and well defined payment infrastructure, coupled with well-negotiated decision-making processes and well-defined resource tenure. He does however stress that social and economic outcomes are a secondary 'by-product' – echoing the underlying principles of neoliberal philosophy. Therefore, there is growing recognition of the need to integrate mechanisms and institutions to minimise the unequal distribution of PES benefits and costs (Muradian et al. 2013).

Conversely, there are strong critiques challenging the neoliberal (economic) foundations of PES. Critics highlight the risks of enthusiastically adopting PES to address both conservation

and livelihood outcomes. Economically, if returns under PES are incommensurate to returns under other land uses, conservation incentives will be ineffective (Adams & Redford 2010). Others argue that the commodification of nature provides only a narrow and potentially inadequate account of its true value. Termed 'commodity fetishisms', commodifying nature is perceived to potentially undermine conservation outcomes because economic values alone mask the important social and ecological values of natural resources (Kosoy & Corbera 2010). Social scientists therefore have reservations about the ability of these relatively quickly constructed ecosystem service markets to incorporate local-level complexities in PES design and implementation. This is especially with regards to facilitating legitimate decision-making processes and equitable outcomes across scales (Brown & Corbera 2003).

Collectively, the limitations of market-based approaches call for a more cautious outlook when considering PES adoption based on 'the fatal attraction of win-win solutions' (Muradian et al. 2013). It is in this spirit that the studies conceptual framework has been formulated. In particular, there is mounting evidence regarding trade-offs mainly because conservation and welfare-related objectives represent competing rather than complimentary goals (McShane et al. 2011). Even if marginalised resource users are eligible and willing to participate in PES, some authors question PES' ability to be "multipurpose instruments" (Pagiola et al. 2005). Evidence illustrates trade-offs between environmental improvement and rural development (Kosoy et al. 2008) and between efficiency in achieving environmental goals and social inclusion (Clements et al. 2010). Where the achievement of more fairly distributed outcomes from PES is still lacking, Corbera et al (2007a) argue that effectiveness from an equity and poverty reduction standpoint requires institutional designs and PES markets to integrate context-related factors such as property rights as well as accounting for the social relations regarding access to resources. Empirical evidence of the institutional dimensions influencing PES/REDD+ design can therefore contribute towards addressing the abovementioned reservations. An explanation of how institutional dimensions are conceptualised in the study is provided in the following section.

1.3.5 The role of institutions in PES/REDD+

Box A represents the component of the conceptual framework which refers to the interplay between formal and informal institutions (institutional context). This component is particularly concerned with understanding how institutions influence, and are influenced by the formulation and implementation of PES/REDD+ schemes. As the previous sections illustrate, conservation does not occur in a vacuum, free from formal and informal

institutional factors and the embedded power structures within and between them. It would therefore be misleading to establish the influence of market-based schemes on equitable outcomes merely according to economic efficiency and ecosystem performance. With this in mind, this section describes the thinking informing the integration of an institutional dimension in the conceptual framework first. The following sub-sections provide an overview of the relevant literature detailing the role of institutions and equity in conservation paradigms more broadly, and then a focus of the same with regards to Kenya.

Based on the above observations, the thesis draws from institutional theory, a branch of New Institutional Economics (Kirsten et al. 2009). According to North, institutions are defined simply as "the rules of the game" that structure social, political and economic interactions (North 1990). Understandings of institutions tend to be vague, because as Ostrom (2005a, 820 cited in Kirsten et al, 2009) observes "… scholars define the term to mean almost anything". Therefore, for the purpose of this thesis, institutions refer to the "systems of laws, rules, norms and regulations that define, constrain and shape actors' interactions" (North, 1990). Because institutions influence and are influenced by PES/REDD+, a two-way link is used to illustrate the relationship between the institutional context and PES/REDD+ in Figure 1.

Understanding local level dynamics is particularly important in contexts like Kenya where no jurisdictional PES/REDD+ scheme exist. This conceptual component is deemed necessary to provide relevant empirical evidence through in-depth research and case-specific institutional histories. Evidence of this nature is increasingly being demanded to identify the social and political processes (the relationships between actors) that mediate PES conservation outcomes, in order to promote more effective implementation (Corbera, Brown, et al. 2007; Peskett et al. 2011; Whaley & Weatherhead 2014; Muradian et al. 2010; Sommerville et al. 2010).

Cases from the PES/REDD+ literature provide relevant reasons that support the integration of an institutional component as part of this conceptual framework. There are increasing calls to dedicate explicit attention in PES scholarship to the underlying social and political dimensions of local-level institutions (Whaley & Weatherhead 2014). Drawing on social and political dimensions reflects a growing number of concerns that PES is being adopted at the expense of overlooking various institutional factors important for conservation outcomes (Fauzi and Anna, 2013; Hendrickson and Corbera 2015). Specifically, numerous authors

argue that PES mechanisms mask the power asymmetries that influence distributional and decision-related processes and outcomes (Kosoy & Corbera 2010; Brockington 2011; Mcafee 2012; Norgaard 2010; McDermott et al. 2013). These critiques question the extent to which existing inequalities are reinforced under PES schemes (Mahanty et al. 2012; Roth & Dressler 2012), as well as the degree to which the social and economic benefits and costs are evenly distributed (Ferraro & Simpson 2002; Corbera, Brown, et al. 2007). In addition, although not often explicitly analysed, commodity fetishism has gendered implications with respect to access to, and control over resources which may inadvertently be overshadowed (Westholm andArora-Jonsson, 2015; Berbés-Blázquez and Pascual, 2016).

Other critiques emphasise that PES rarely operates through the ideal type market exchange scenario (Muradian et al. 2013; Mcafee 2012; Norgaard 2010) but is instead socially constructed (Muradian et al. 2010), and dependent on community and state involvement (Sommerville et al. 2010). Social constructions are fundamentally the outcome of both written and unwritten rules and customs. One can argue therefore, that social constructions distort equitable outcomes, especially in contexts where pervasive inequity already exists. Therefore, adopting an institutions and equity approach can investigate the extent to which socially constructed nature of PES is prone to, or creates the opportunity for different forms of marginalisation, such as elite capture and gender exclusion to transpire or persist. Even Wunder (2007: 50), a primary promoter of market-based approaches, accepts that "the majority of the PES initiatives in the global south are at best, 'market-like'".

The above sections identify equity and institutions as core components of the conceptual framework. To better situate the relevance of these components within the conceptual framework, it is therefore necessary to describe how conservation institutions have been adapted over time to address inequitable outcomes. The following section provides a review of the historical evolution of conservation approaches prior to the introduction of market-based approaches and the dominant role played by equity.

1.3.6 Equity-driven Evolution of Conservation Approaches

The evolution of biodiversity conservation has been largely shaped by attempts to balance national and/or global conservation needs with local-level welfare needs. An overview of approaches reveals that earlier conservation models that failed to integrate equity into project design were implemented to the detriment and/or deterioration of local community well-being as well as conservation targets (Adams & Hutton 2007). Inequity in conservation

planning and implementation has been both physical and political (Brockington 1999; Adams & Hutton 2007; Hulme & Murphree 1999). And while more equity-oriented approaches have emerged, successes have been limited because in many instances programmes have remained poorly planned and have also reinforced existing power imbalances therefore undermining the achievement of sustainable local development (Nabane 1996; Schmidt-Soltau & Brockington 2007; Hackel 1999). Adverse consequences on women have also been recorded with regard to outright exclusion and increased demands on labour which are rarely compensated for (Songorwa 1999; Nabane 1996).

The next subsections review in more detail the dominant narratives that have influenced conservation approaches. The intention is to illustrate how conservation approaches have been informed by flawed assumptions which have progressively been challenged partly on the grounds of inequitable outcomes - all the while representing fundamental reconfigurations of institutional arrangements and environmental governance structures.

State-led Conservation: Inequitable outcomes

"… the good of conservation is such a powerful 'myth' that it dulls our expectations of ill effects".

Dan Brockington (2004: 414)

For most of the twentieth century, the dominant discourse in conservation was that of species extinction as a result of human activities. Until the 1980s, 'fortress conservation' based primarily on the American philosophy of 'wilderness' created exclusive ('people-free') protected areas and prevented the consumptive uses of natural resources (Adams & Hulme 2001). By the 1960s, images of wilderness proliferated through mythical representations of Africa as a 'lost Eden' where humankind was its "chief destroyer and conservation its necessary regime of salvation" (Graham, 1973 in Adams & Hulme 2001: 7). This idealised paradise of an Africa under threat from 'native' destroyers was the main motivation for national park creation and the consequent separation of nature from human life (Neumann 1997).

Fortress conservation represents the deliberate effort through state infrastructure to exclude local resource users from park confines and from the use of the parks' natural resources. Sometimes referred to as the 'classic' or the 'fences and fines' approach, the role of the state in fortress conservation is vital for defining the conservation problem, formulating the policy

and ensuring implementation and enforcement (Blaikie & Jeanrenaud, 1996). An early definition of National parks by the World Conservation Union (International Union for the Conservation of Nature - IUCN) highlights the degree of political and physical exclusion embedded within the wilderness discourse. National parks were defined as a vast area "not materially altered by human exploitation and occupation, where… *the highest competent authority of the country has taken steps to prevent or eliminate as soon as possible exploitation or occupation of the whole area*" (IUCN, 1982).[5] The first leader of the US National Parks Service even stated that their purpose is to "keep the established sites safe from *invasion* and *purge the established sites of private holdings*" (Everhard, 1972 cited in Hales 1989: 140).

The effectiveness of state-led approaches became increasingly compromised largely due to the failure to integrate equity into design and implementation (Adams & Hutton 2007). Concerns over the impacts of protected areas on local-level livelihoods increasingly emerged as protectionist approaches became synonymous with both the physical and political alienation of local communities – which was increasingly considered as ethically incorrect (Brockington 2002; Colchester 1997; Brechin et al. 2002). Physical alienation was manifest in evicting communities from designated protected areas (Neumann 2008). Evictions like those that occurred in Tanzania and many other areas in the region, led to mass displacement of pastoralists, which affected the livelihoods of men and women differently and negatively (Brockington 1999; Adams & Hutton 2007; Brockington 2011; Hulme & Murphree 1999). In some instances, the presence of indigenous people was (and still is) tolerated within protected areas on the grounds that they "conform to stereotype and do not adopt modern practices"; these conservation policies are equated with the notion of 'enforced primitivism' (Goodland, 1982 in Colchester, 1997: 100). Politically, communities were excluded from processes of creating conservation policy (Adams & Hulme, 2001). Furthermore, state-enforced coercive mechanisms were often employed if conflicts related to the seizure of biological resources arose (Blaikie and Jeanrenaud, 1997).

Exclusion, both on political and physical grounds reflects therefore the high degree of procedural and distributive inequity within the institutional conservation contexts at the time. Such forms of inequity pose a considerable threat to conservation outcomes. In response to

[5] This contemporary explanation echoes earlier definitions of national parks as boasting extensive areas of 'special' land with natural beauty that have been set aside and preserved from the "ravages of ordinary use" (Hales, 1989: 139).

rigid protectionist policies, the Maasai massacred large numbers of lions, leopard cubs, hyenas, rhinos and elephants in Amboseli (Kenya) (Western & Wright 1994: 30).[6] Wildlife slaughter, attacks on tourists, fires and mass disobedience have also all been observed, and are increasingly recognised as "beyond the ability of the state and international allies to control" (Brockington, 2004: 415). Combined, such acts sent out a clear message to conservationists: places of rich biodiversity lie squarely in the fate of the local communities who live in and around protected areas. Events such as these have raised the profile of local people towards the survival of biodiversity and the importance of advocating their participation to achieve conservation.

Ideologically therefore, 'fortress conservation', underestimated or ignored the problematic consequences of its policies. Increasingly it became accepted that the major weakness of fortress conservation is "social and institutional" rather than "geographical or ecological" (Barrow & Murphree 2001: 31). Critiques of protectionist approaches therefore emphasise that while global conservation benefits may accrue, they must not be at the expense of locally incurred costs. Below we illustrate the transition towards more inclusive conservation approaches which emerged as an alternative to the inadequacies of the fortress mentality.

Community-led Conservation: More equitable outcomes?

"[Community conservation is] is part of wider processes of social change and about attempts to redistribute social and political power".

David Hulme and Marshall Murphree (2001: 4-5)

The importance of both procedural and distributive equity began to gain dominance in conservation discourses during the 1980s. The narratives of extinction and exclusion were progressively challenged by a community-oriented philosophy which emphasises the inclusion of local people both physically in protected areas, and politically in the policy processes of conservation (Adams and Hulme, 2001: 8). During the 1980s, African conservation policies and agencies were challenged both on empirical and practical grounds (Hulme and Murphree, 2001). Empirically, the romantic and mythical assumptions underlying fortress conservation were condemned for creating social depravation (Blaikie and Jeanrenaud, 1997). Practically, large-scale habitat loss due to agricultural expansion was occurring, and the escalating pace of illegal offtake (including, elephant, rhinoceros and

gorilla) nearly brought many iconic species to the edge of extinction. There was also increased concern about the governance structures mandated for biodiversity conservation, namely, the incapacity of state bureaucracies to manage the environment, the dismal record of projects to protect biodiversity and the dissonance between state and local incentives for conservation. The perception that state power (centralised approaches) undermined legitimacy and local democracy encouraged the view that conservation is best performed by the 'community' rather than state officials (Adams and Hulme, 2001). Combined, these limitations highlighted the need for new, systematic approaches to conservation which incorporated human activity (Barrow and Murphree, 2001).

Informed by principles of sustainable development, community conservation emerged in response to the inequitable outcomes of protectionist approaches. Community-based approaches refer to the "principles and practices that argue that conservation goals should be pursued by strategies that emphasise the role of local residents in decision-making about natural resources" (Adams and Hulme, 2001: 8). These approaches therefore require alternative environmental governance structures and signify a change in political emphasis regarding local participation in and benefits from conservation. Essentially, this transformation "opened the door on the biggest conservation challenge of all: how to deal with the vast majority of the earth's surface, where there are no parks and the interests of local communities prevail" (ibid).

The emphasis on sustainable development is that basic human needs should not be ignored by conservation objectives and the integration of conservation with development is fundamental for conservation to succeed (Pimbert and Pretty, 1997). Realisations were that uneven access to natural resources places the poor at risk of being so economically marginalised that "their livelihood strategies degrade the very resources that sustain them" (Blaikie and Brookfield, 1987 in Adams and Hulme, 2001: 13). Ecologically, the thinking was that conservation must be practiced 'outside' protected areas which inadvertently are host to the majority of biodiversity. For example, large dispersal areas are required by mobile wildlife populations for feeding and to ensure a healthy breeding stock (Adams and Hulme, 2001: 15-16). The 'community' outside of protected areas are therefore vital stakeholders in conservation (ibid).

With such local perspectives in mind, the wave of decentralised and more community-oriented conservation approaches which followed fortress conservation included Community-Based Natural Resource Management (CBNRM), Community Based Conservation (CBC),

Joint Collaborative Management and Integrated Conservation and Development Programs (ICDPs) (Adams & Hulme 2001; Western & Wright 1994). On one extreme of the spectrum are minimalist 'park outreach' initiatives which provide the neighbours of protected areas limited access to park benefits, for example, by distributing a small share of park revenues. At the other extreme, 'community-based natural resource management' initiatives operate by devolving resource tenure and associated management responsibilities to local institutions. For example, CBNRM transfers the ownership of large game to a local authority which fully manages the resource and associated benefits.

The predominant approaches within the Eastern African nations of Tanzania, Uganda and Kenya are park outreach approaches (POA). POA demonstrate an attempt to integrate principles of distributive and procedural equity into conservation design. According to Barrow and Murphree (2001), POA prioritise enhancing the biological integrity of protected areas by educating and providing benefits to local communities and integrating the role of protected areas in local plans. Because protected areas were declared by replacing pre-existing tenure with state ownership; local access to resources and benefits was only through 'theft'. Thus, POA introduced initiatives that expand the tenure arrangement by enabling some degree of access rights for local communities, converted into benefits, while the state retains 'legal' ownership" (ibid: 32-33).

Despite these advancements in equity, the extent to which community-based projects successfully achieve joint objectives of conservation and development has been widely discussed (Adams et al. 2004; Blaikie 2006). In many instances decentralised approaches were poorly planned and reinforced existing power imbalances which served to undermine the achievement of sustainable local development (Nabane 1996; Schmidt-Soltau & Brockington 2007; Hackel 1999). Consequences of ICDPs on particularly women included a considerable increase in their workloads to meet household welfare outcomes (Songorwa 1999; Nabane 1996); the unequal control over incomes which limited their benefits from activities, in spite of their labour contributions (Nabane 1996); and in some instances their overall exclusion from activities due to high entry costs (Songorwa 1999).

Scant evidence of sustained poverty reduction and conservation therefore exists (Adams et al. 2004; Agrawal & Redford 2009; Hulme & Murphree 1999) and the assumptions underlying the integration of conservation and development heavily criticised (Barrett & Arcese 1995; Songorwa 1999; McShane et al. 2011). One major critique of community-based approaches is

that the joint objectives of conservation and development involve the fundamental contradiction of "competing rather than complementary goals" (McShane et al. 2011). Community approaches have been criticised for neglecting scientific rationales, therefore have failed to conserve threatened species and ecosystems (Wilshusen 2010; Hutton et al. 2005). Moreover, that local support is a prerequisite for conservation is a misleading claim. Despite the participation of local communities, some argue that through strong enforcement (which does not necessarily equate to inequitable conservation models) successful fortress conservation outcomes can be achieved, as has been witnessed in Tanzania (Brockington 2004).

The above description highlights the mounting significance *and* associated challenges of meeting both equity and conservation outcomes. Market-based mechanisms like PES/REDD+ therefore represent the latest in the spectrum of conservation approaches with the potential to achieve 'win-win' outcomes. However, an emerging observation is that market-based mechanisms cannot be exempted from similar, if not more worrying concerns than those levelled at previous conservation approaches with regard to their multiple objectives (Atela 2012; Muradian et al. 2010).

1.3.7 The Role of Institutions in Gendered Relations of Production

The final component illustrated by Box B in the conceptual framework relates to the gendered dimensions considered in the study. The conceptual framework is primarily directed towards understanding gender equity outcomes in PES/REDD+. Based on the literature, the premise is that gender equity outcomes can be determined or evaluated according to various factors. In particular, gendered property rights and gendered divisions of labour represent critical factors identified in the literature as relevant for the analysis of gender equity in NRM more broadly. How gendered factors are influenced by both the institutional context (Box A) and PES/REDD+ design is also central in defining the gender equity outcomes of importance to the study.

Gender is defined as the relations between men and women and is determined by social constructions rather than by purely biological factors. *Gender relations* are the "social relations which systematically differentiate men and women in processes of production and reproduction" (Jackson 2003). Relations of production are defined as those social, economic and technological relationships that to some degree must be entered into in order to survive, produce and reproduce livelihoods. As illustrated in the Conceptual Framework, these

relations are embedded in wider institutional structures and are characterised by gendered power dynamics that influence access to, and control over natural resources. An exploration of the relations of production must therefore consider the role played by property rights and by divisions of labour.

As institutions refer to the "systems of laws, rules, norms and regulations that define, constrain and shape actors' interactions" (North, 1990), they therefore influence the provision of ecosystems services by regulating human (men's and women's) interactions with natural resources (Corbera et al. 2009; Dietz 2003). Institutions also condition the processes by which rules and regulations under PES/REDD+ schemes are arrived at and thus the equity outcomes for male and female resource users. To capture the complexity between institutions and gendered interactions with natural resources, the thesis draws a distinction between codes of conduct that are formal (written rules, laws) and informal (unwritten norms and customs).

The degree to which the status of gender equity is influenced or influenced by PES/REDD+ depends therefore on key aspects of relations of production. Captured under Box B in the Conceptual Framework, the role of property rights and gendered divisions of labour are important categories investigated in this thesis to establish gender equity, and both are described below in more detail.

The role of property rights

An important indicator of gender equity in PES/REDD+ regards the status of property rights which are formal and informal institutions which condition men's and women's relations of production. Property rights refer to a "fundamental institution governing who can do what with resources" (Kirsten, et al. 2009). Specifically, Furubotn and Pejovich (1972) define property rights as "the claims, entitlements and related obligations among people regarding the use and disposition of a scarce resource" (cited in ibid). Existing in the form of many combinations, property rights include 'use' rights, such as the right to access, consume or exploit a resource for economic benefit, and 'control or decision-making' rights, such as the right to manage a resource, exclude others from accessing a resource and dispose of a resource for economic or other gains (Meinzen-Dick & Mwangi 2009). Property rights also vary according to different regimes, such as public (state-held rights), private (individual or corporative-held rights) or common property (group-held rights) (Mwangi & Meinzen-Dick 2009). Institutions of property rights are therefore part of the wider set of social relations of

production and reproduction that determine gendered interactions with natural resources (Jackson 1993).

Tenure is represented in the conceptual framework as an outcome of the interaction between formal and informal institutions which influences gendered relations of production (Box B). Tenure rights are complex and are to be understood as "overlapping bundles of rights" (Schlager and Ostrom, 1992 in Mwangi & Meinzen-Dick (2009), or what Rocheleau & Edmunds (1997) refer to as 'nested tenure'. Often, even though women lack ownership rights (formal institution), they have secure use rights which enable them to earn money from a resource like land (usufruct rights; informal institutions) even though they have poor control and decision-making powers over its disposal. This conceptual framework emphasises that these differences are important within the context of PES. In the majority of cases, even though women (as non-landowners) are ineligible to sign PES/REDD+ contracts, they may still have to comply with regulations despite not having access to direct PES incentives.

The gendered distribution of costs and benefits accrued from PES/REDD+ therefore has implications on equitable outcomes. It is important therefore to distinguish between resource management and resource ownership – the interplay between formal and informal institutions.[7] Using an example from Kenya, Bradley (1991 cited in Rocheleau & Edmunds 1997) warns that assuming that a lack of ownership rights disqualifies women's use and management rights inadvertently increases women's exclusion from conservation activities.

As part of the Institutional Context (Box A), tenure rights are also critical for the success of conservation outcomes. The rationale is that when secure, property rights provide incentives to protect natural resources and are an important prerequisite for increased investment in resources such as land and trees especially if long-term returns on investments are expected (Place, 1994 cited in Meinzen-Dick & Mwangi 2009). The status of property rights also largely determines exclusion and inclusion in PES/REDD+ schemes. Adhikari & Boag (2012) show that well-defined property rights are a crucial factor for enhancing participation in PES schemes so landless resource-users are often excluded.

Formal tenure often takes precedence in PES/REDD+ membership, therefore is recognised as an important determinant of distributional equity under the conceptual framework. In many African countries, control and decision-making rights over resources tend to be a product of

[7] The same observation is also necessary for the landless poor and other marginlised groups.

patrilineal culture and its institutional reproduction. Often women's tenure, compared to men's, is exacerbated by processes of land privatisation (Lastarria-Cornhiel 1997). In Kenya land privatisation has been characterised by a high degree of gendered power imbalances that have left most women (and marginalised community groups) with no land tenure security (for Kajiado, see Mwangi 2009; for Western Kenya, see Rocheleau & Edmunds 1997), or indirect tenure. Such inequalities may determine the degree to which women compared to men are willing, or even able to adopt conservation practices and invest in land improvements (Jackson 1993). Because men and women attribute different values to natural resources (see Rocheleau & Edmunds 1997 on trees in Kenya; Wangui 2003 on land, livestock and crops in Kenya), an understanding of gendered imbalances in tenure should be considered important for PES/REDD+ design and implementation (captured in the PES/REDD+ category in Box B). Incentives that maximise environmental and social outcomes for both men and women are nonetheless few (see Rocheleau & Edmunds 1997 on their review of two agro-forestry programs in Kenya).

The overdependence on formal tenure serves to overlook the underlying factors that distinguish between ownership and use – especially because these often reveal pervasive imbalances of power. For example, Atela (2012) highlights the importance of distinguishing between customary norms and legally recognised tenure that shape gendered property rights in Kenya in an effort to avoid conflicts through carbon commoditisation. The conceptual framework therefore attempts to incorporate a gendered analysis of the underlying differences between types of property rights (formal and informal). That women can mistakenly be elevated to the status of property rights holders and their limited access to benefits overlooked has been documented elsewhere (Jackson 1993).

Divisions of labour

Men and women interact differently and significantly with the natural resources under conservation and this is often influenced by formal and informal rules and regulations as well as the regulations stipulated under PES/REDD+ design. The conceptual framework seeks to explore the extent to which market-based approaches influence gendered divisions of labour, and the processes involved in re-organising gendered labour allocations. Drawing from Feminist Political Ecology (FPE), gendered divisions of labour "explain labour processes, and show that development interventions, environmental transformations and *new markets* put new demands on labour and new values on resources" bringing about new gendered

negotiations (Wangui 2003). The purpose of the conceptual framework is to expand this line of enquiry to capture the 'male' and 'female' aspects of gender relations. For PES to contribute to improved equity outcomes, then the gender specific roles in resource management must be adequately understood and integrated into program design (United Nations, 2008). Programs designed with gendered impacts in mind do show potential for reducing gender disparities in divisions of labour as well as in enabling the achievement of important household welfare outcomes.

Much of the literature on 'gendered' divisions of labour focuses on the uneven distributional impacts on women, and obscures the extent to which men adapt to changing resource-related circumstances within various contexts. Women's increased labour demand is by far the most cited impact arising from agricultural development interventions and environmental transformations. Examples range from programs which increase labour inputs for women whilst reducing their control over agricultural production processes and outputs (Schroeder 1993; Koppen 1998), to those that result in increasing women's workloads (Songorwa 1999; Nabane 1996) and those that reinforce the constraints the project initially sought to address (Kabeer 2010). As illustrated by the conceptual framework, environmental conditions (like climate change) also have gendered impacts. Transformations characteristic of climate change (such as droughts and floods) reportedly render women more likely to suffer from the consequences than men (Skinner 2011; Aboud 2011; Denton 2002). However, comparative analyses of how both men and women adapt to changing circumstances (such as PES regulations) are infrequently documented (Colfer & Minarchek 2012).

What makes FPE relevant to this conceptual framework is the opportunity to explore whether and how gender roles change as a result of PES-related land-use regulations. Historical trends demonstrate that gendered labour roles are not static and change according to various factors. In particular, studies on Kenya show that development interventions, land reform policies, market opportunities, social forces and changing land tenure contribute to changing gendered labour patterns (Wangui 2003; Mwangi 2009; Doss & Mc Peak 2006). History also reveals that gendered labour allocation tends to be socially rather than biologically determined (Agarwal 1997). The norms that individuals and groups attach to 'maleness' and 'femaleness' are not always pre-determined and over time transform to adapt to external drivers of change (Wangui 2003). Therefore, the ability for households to meet important outcomes depends on their ability to re-configure existing gendered divisions of labour. For example, a study by Kitching (1980 cited in Wangui, 2003) shows how colonial policies in Kenya (ban on

wildlife utilisation, hunting, raiding and fighting) led to the underutilisation of male time which triggered a process of household labour reorganisation in order to fulfil survival needs; at the same time, pastoral women had to allocate more time to livestock-related duties than before.

1.3.8 Cutting Across Scales: Community to intra-household dimensions

A relevant and unique feature of the conceptual framework is the provision to assess equity across multiple social scales (Box B). McDermott et al. (2013) argue that it is important to assess equity through defined social scales in order to identify who is affected and therefore improve targeting efforts in PES schemes. This conceptual framework enables an exploration of equity from, i) the intra and inter household perspectives which highlights differences in the gendered distribution of costs and benefits resulting from PES-related resource management decisions (distributional equity though changing divisions of labour); ii) the community perspective which highlights gendered differences in access to PES-related design and implementation (procedural equity); (iii) all three scales which captures gendered differences in perceptions of the way resource users access and derive benefits from ecosystem services as well as collectively ensure their provision (the roles of access, control, decision-making and institutions).

There is increasing merit attributed to exploring the various dimensions of gender equity from multiple scales. Conceptually, at the household level, decision-making rests on outcomes that support either cooperation or conflict. Cooperation arises if outcomes are expected to make household members better off than by not cooperating; whereas conflict will arise where cooperation is seen to benefit certain members of the household more than others. In the context of labour relations, the outcome of the decision-making process depends on the relative bargaining power of household members to negotiate for control over their labour allocation. Wangui (2003) found that because the survival of the household is paramount, pastoralist households in Kenya are more likely to cooperate (see also Carter and Katz, 1997 cited in Okali 2012). Conflicts in decision-making over labour allocation can arise however, if household members fail to uphold efforts to secure the benefits of their labour for household well-being (ibid). Household members can contest either implicitly (temporarily withdrawing labour, see Schroeder 1999 cited in Wangui, 2003) or explicitly (permanently withdrawing labour).

Therefore, understanding the relations of production from an intra-household bargaining angle may show how labour and expenditure patterns are negotiated in households participating in PES schemes. Additionally, even in gender inequitable situations, the theory of cooperative conflict explains that a 'rational commitment' to inequitable household arrangements can persist (Okali 2012). The context specific understanding for why gender-inequities persist can therefore inform programme design to reduce harmful impacts on divisions of labour, rather than straining the achievement of important household needs.

The beauty of intra-household analysis therefore rests in the opportunity to investigate issues from a gender-balanced standpoint. Various accounts of intra and inter-household gender conflicts in response to an increased value in resources often show women beneficiaries losing out due to changing property and labour relations between husbands and their wives. Examples of backlash against women include men taking over irrigated rice crops in the Gambia (Braun & Webb 1989) and beans in Malawi and Uganda (Njuki et al. 2011) and violence on women employed in flower farms in Ethiopia (Goldstein 2012). More research on how men are disadvantaged by intra-household dynamics is however required in order to maximise chances of cooperation and minimise cases of conflict.

A poor understanding of the interplay between gendered relations in and of production at multiple scales can compromise outcomes. Such interventions tend to target households as one unit consisting of homogenous members living in harmony and run the risk of improving the welfare of men, who have control, at the expense of women who do most of the work and get little in return (see, for example, work on a carbon PES scheme in Kenya Atela (2012); in agriculture, see work on cattle in Kenya by Mullins et al. (2011) and in Tanzania by (Hill 2003). These are the main reasons why directly targeting the needs of both men *and* women in PES schemes are among the emerging approaches employed by CARE (Shames et al. 2012).

The above review highlights the important gender-related factors for consideration when assessing gender equity outcomes in the study. For further clarity the theoretical foundations of gender and environment links that have informed the conceptual framework are described in the following section.

1.3.9 Gender and Environment Links: A review of the theories

The emergence of theories linking women and gender, environment and development can be attributed to Boserup's (1970) analysis of women's productive and economically

unrecognised contribution to agricultural development (Wangui 2003). Consequently, three main theories materialised that to different degrees pivoted academic thinking as well as development (and conservation practice) initially towards a women-centric and later, a gendered direction. A review of these paradigm shifts, their critiques and their subsequent influence over development and conservation practice highlights i) the contested nature of the relevance of gender's role in environment, NRM and development discourses (Nightingale 2006) and, ii) the empirical rigour with which women, gender and environmental linkages should be examined. The three approaches are Ecofeminism, Feminist Environmentalism and Feminist Political Ecology.

Ecofeminism

The Ecofeminist approach popularised predominantly by Vandana Shiva, defined women's relationships with the environment from a naturalist perspective. The Ecofeminist stance states that women relate to the environment in a special way due to their natural maternal and cultural closeness to nature (Wangui 2003; Leach 2007). The naturalist approach rekindled dormant references to 'mother earth' myths which not only justified women's roles, but also drew political charm to the view of environmental solidarity among women (Leach 2007). The timing of Ecofeminism in the mid 70's coincided perfectly with the growth of environmental movements like the Chipko Movement in India (Nightingale 2006); movements that were occurring towards the end of the protectionist (wilderness) era described in Section 1.5.1. The powerful images of women as protectors of the environment and the overall feminisation of nature generated a momentous buy-in from development agencies and NGOs around the world and established a redefinition of development and conservation approaches. Ecofemism also inspired the Women in Development (WID) and the Women, Environment and Development (WED) Approaches widely applied to agriculture and development interventions in the 1980s (Leach 2007). Ecofeminism therefore coincided with the wave of community-oriented conservation approaches that emerged in the 1980s and 1990s described in the previous subsection.

Ecofeminist principles and the projects and programmes which they informed were however heavily criticised, especially in regards to their assumptions of naturalism and essentialism. The view that women have a spiritual and revered connection with the environment conceals important issues concerning property rights and power which shape gendered environmental relations. According to (Wangui 2003), programs based on this assumption assigned women

environmental responsibilities "without addressing whether they had the resources, time, will and capacity to do so". While some successes were noted (see for example, the Greenbelt Movement in Kenya), the essentialism of Ecofeminism portrayed women around the world as homogenous, and neglected important categorical differences resulting from class, age and ethnicity (Wangui 2003). Essentialism debatably jeopardised project success, argued by many as being secured to the detriment of women (Leach 2007), particularly those whose concerns may have been overlooked due to gendered forms of elite capture (see Agarwal 2001 account on participatory exclusion in India).

Feminist Environmentalism

Critics of ecofeminism therefore advocated for a broader approach with which to understand women and environment links namely through the investigation of gendered social relations and the corresponding power structures that govern them (Leach, 1994 cited in Wangui 2003). Critics also called for approaches to investigate the context within which environmental relations occur and that identify how men and women interact with natural resources for their livelihood strategies (Jackson 1993). Two subsequent approaches emerged – Feminist Environmentalism (FE) and Feminist Political Ecology (FPE).

FE demonstrated a fundamental shift in thinking from women and environment links, to gender and environment links. In response to Ecofeminist critiques, FE contests the theory that women have a natural and inherent bond with the environment (naturalism) and that they are a homogenous group (essentialism). Instead, this approach emphasises that material aspects of gender relations determine gender-environment relations. Such material aspects may include the gendered work practices and culturally-specific gender roles which shape the gender-environment nexus (Nightingale 2006). FE therefore raised the profile of gendered divisions of labour, one of the key components in the conceptual framework.

The relational approach to gender raises the point that women's relations with the environment cannot be viewed in isolation from that of men, as both constitute the division of labour. This line of theory allows for the avoidance of the costs of environmental degradation to be seen as accruing only to women and instead justifies the need for i) an inquiry into how gendered division of labour is contested and changes under environmental stress; ii) an account of men's environmental relationships and iii) an investigation of the context within which degradation occurs (Jackson 1993).

Feminist Political Ecology

FPE which presents an alternative approach to those reviewed adopts the view that societies are heterogeneous and that both political and economic power influence resource (natural, financial and cultural) allocation and use. First developed by Rocheleau et al. (1996) this theory seeks to jointly address issues of gender, environment and development (Wangui 2003) and proposes a three-tiered approach that focuses on an investigation of i) access to and control over resources; ii) gendered constructions of knowledge, and iii) local gendered environmental struggles in regional and global economic and political contexts (Elmhirst & Resurreccion 2008). When applied to biodiversity, FPE recognises social and ecological complexity and acknowledges the unequal power relations that influence the use, control and even perception of resources. Women may be locked into natural resource dependence through imbalanced power relations with men. For example, women may gather wild fruits because they can't access income from income-generating trees on private holdings of men (Leach 2007). FPE therefore raised the profile of gendered property rights which features significantly as part of this studies conceptualisation. This multi-disciplinary approach highlights the importance of gendered access to and control over resources and emphasises the politics behind the struggle of men and women to sustain viable livelihoods, especially in the face of increasing adversity and climatic variability (Agarwal, 1997b cited in Wangui, 2003).

The evolution of gender and environmental thinking occurred almost in tandem with the evolution of environmental conservation approaches. Both transitions therefore are examples of a struggle to meet more equitable outcomes in NRM. The emergence of FE and FPE in response to the inconsistencies of Ecofeminism emphasised a departure from assumptions of naturalism and essentialism to clarify the complexities of gender and environment linkages. Today, statements about women's natural link to the environment have receded into academic writings and while women's contributions to biodiversity conservation and agricultural production (for example water provisioning) are still recognised, they are delivered within a context of advocacy for equality in the categories of property and inheritance rights, access to services and for gender mainstreaming (Leach 2007).

However, as scant documentation regarding gendered dimensions in PES/REDD+ exists, there is some scope to review the gendered dimensions in agriculture that may have bearing

on the current study. Lessons from agriculture may concretise the thinking behind the conceptual framework described above.

1.3.10 Gendered Relations: Lessons from agriculture

As the above section illustrates, gender imbalanced tenure may inadvertently lead to gender-blind PES/REDD+ schemes. However, with scant evidence of the role of gender in PES, lessons from agriculture may provide further insights. A gender focus in agriculture is justified largely by women's significant income and labour contribution to household welfare outcomes, especially with regards to food security and warrants greater attention in the design and implementation of PES/REDD+ initiatives (Food and Agriculture Organisation (FAO) 2011a), particularly due to the introduction of a new income stream

Agricultural and natural resource-dependent women reportedly spend a greater proportion of the income they control on family needs – such as food and school fees – while men have been found to spend money on bulkier expenditures such as investments, housing and school fees (Conelly and Chaiken, 1993 in Valdivia 2001) and on luxury items such as smoking and drinking (Thomas-Slayter & Bhatt 1994; Haddad et al. 1994; Quisumbing et al. 1995). Many studies also show that women's management of income is associated with improved child nutritional status (Hoddinott & Haddad 1995). These findings strongly support the theory that households do not operate as a single unit (see Udry et al. 1995; Quisumbing & Maluccio 2000 on the unitary and collective household models). Therefore, threats to women's income share from agricultural produce (perhaps as a result of changing land use practices arising from PES schemes) may pose risks to improved child nutrition, education and overall household welfare. Based on this evidence and the potential development implications, issues around financial incentives and participation in PES/REDD+ schemes will warrant careful consideration if socio-economic outcomes (such food insecurity) are to be equitably distributed. A gendered lens allows therefore for the design of PES/REDD+ that are more responsive to important, but often neglected gendered dynamics.

The above overview seeks to provide adequate information to show that aligning institutional perspectives with a gender and equity approach is relevant. To reiterate, the review indicates that an institutions approach lends itself to this research as equity is ultimately shaped by the institutional context within which conservation approaches (like PES/REDD+) are formulated and implemented (Adhikari & Boag 2012). The above sections also highlight that institutional analyses can be advocated because no real justification exists for why efficiency

concerns in PES should be more important than other societal goals such as equity (Muradian et al. 2010). An institutions and equity approach is particularly relevant to enable a rich analysis of the often neglected gender relations under PES because commoditisation of ecosystem services can create new, or exacerbate existing power hierarchies that influence gendered relations in access to, and control over wealth and natural resources (Kosoy and Corbera 2010). To better situate the conceptual framework within the study context, an overview of the evolving conservation approaches in Kenya is presented in the following sections.

1.4 Overview of Conservation in Kenya

A significant proportion of Kenya's Gross Domestic Product (GDP) is derived from natural resource based industries such as agriculture and tourism; therefore implementing effective approaches to protect or enhance natural resources is of national importance. Given the country's rich natural resource base, the history of biodiversity conservation in Kenya is in all senses testimony to the evolution of approaches described in 1.5. The changing paradigms have therefore played an important role in influencing institutional arrangements that are deemed necessary to promote more equitable conservation outcomes (Mburu & Birner 2007; Adams & Hulme 2001).

Mosaic of Conservation Approaches: Differing degrees of equity

Today, Kenya is characterised by legal pluralism demonstrated by a spectrum of conservation approaches testament to the break from top-down, to bottom-up strategies. Kenya's existing conservation approaches represent a medley consisting of protected areas (PAs), community-based initiatives, and increasingly, PES/REDD+ schemes. The Kenya Wildlife Service (KWS) documents that approximately 8% of the countries landmass is allocated to PAs, which constitute 23 terrestrial national parks, 28 terrestrial national reserves, 4 marine national parks, 4 marine national reserves and 4 national sanctuaries (KWS website). The degree of human activities varies between parks and reserves. In national parks, complete protection of natural resources is permitted through limited human activity through tourism and research, whereas in reserves, human activities such as fishing or collection of firewood are allowed under specific conditions (ibid). In many cases, the Kenyan context like several others demonstrates that equity or seeking to reconcile the needs of conservation and local livelihoods (Salafsky & Wollenberg 2000) therefore continues to be both a driving force for

changing conservation approaches as well as a challenge to the achievement of conservation outcomes.

Emerging within this mosaic of conservation approaches are land lease arrangements around protected areas rich in biodiversity. Essentially, land is leased to conservation agencies and tourism operators where communities receive financial benefits for adopting approved land use practices (Bedelian 2012; Osano, Said, de Leeuw, et al. 2013; Osanoet al. 2013; Bedelian 2014; Chomba et al. 2016; Gichohi 2003). Lease arrangements constitute efforts to operationalise PES schemes in Kenya in a variety of ecological settings, including payments for wildlife services in some pastoral and agro pastoral areas (Bond 2008; Kissinger et al. 2013; Bedelian 2014; Osano et al. 2013). There is also a growing interest, especially from the government in carbon sequestration schemes and sub-national REDD+ projects which have the potential to contribute to a number of development outcomes (Atela 2012; Chomba et al. 2016; Atela 2015). More broadly however, across the continent, "structural obstacles such as insecure land tenure and underdeveloped service–buyer institutions" (Ferraro, 2009 cited in Wunder 2012) have led to the slower development of PES schemes in Africa.

PES and REDD+ in Kenya

In Kenya, wildlife-based tourism is a significant foreign exchange income earner and in 2012, generated USD1.2 billion (KES 96 billion) [8] (Kenya National Bureau of Standards (KNBS), 2013). 65% of the country's wildlife is hosted outside of state protected areas, 40% of which are found in community and private conservation areas (Western et al. 2009). Therefore, the importance of securing viable wildlife populations by converging roles of the private (tourism) and community (landowners) sector is increasingly exploited. As a result, recent years have observed a growing number of community conservation and tourism initiatives.

In 2011, over 40 different community conservation areas were identified (Bosire et al, 2012), with many more expected to exist today. Conservancies constitute multi-stakeholder institutional arrangements across varied contexts. They often emerge and develop uniquely to suit the opportunities and priorities presented by existing social, political, economic and environmental conditions. Conservancies that offer direct benefits to communities do however constitute similar building blocks. Namely, the voluntary and contractual allocations

[8] At an exchange rate of US$1 = KES 80.

of land for conservation in exchange for direct (a share of tourism revenues) and/or indirect (employment, social development projects) benefits on condition that agreed upon land management practices are adopted (Carter, et al. 2008; Osano et al. 2013; Bedelian 2014). So far, emerging evidence from the conservancies suggests direct payments contribute substantially and competitively to on-farm incomes (Bedelian 2012; Norton-Griffiths & Said 2009; Osano et al. 2013; Bedelian et al. 2007; Nkedianye et al. 2009) [9] and offer important co-benefits that enhance welfare-related outcomes (Gichohi 2003).

The REDD+ context in Kenya is considerably different from that of wildlife PES. The REDD+ agenda is driven largely by a global (arguably stagnating), rather than local agenda. At the time of the study, the national REDD+ architecture was under development, but a number of subnational projects were underway. Like community conservancies, these subnational projects also represent multi-stakeholder partnerships, driven mainly by the private sector and NGOs (civil society). Compared with the wildlife sector, REDD+ activities are however less well established in Kenya, but have nonetheless begun to engage local communities in reforestation activities. Unlike the community conservancies, REDD+ follows a set of standard international design and implementation guidelines that integrate key aspects of governance. Combined, the comparison of PES and REDD+ in Kenya allows for an intriguing and exciting analysis to explore the various institutional conditions under which equity outcomes are enabled or constrained.

1.5 Methodology

This section outlines the methods applied in the PhD study. As this is a cumulative thesis, the overarching details are described here and the specific details on methods for each study are fully explained in each subsequent chapter.

1.5.1 Social Constructivism

This study adopts a social constructivist approach by analysing multiple perceptions within the selected PES/REDD+ contexts. Social constructivism enables the researcher to capture complex social and environmental phenomena because actors form personalised meanings of their experiences (Creswell, 2009).Therefore, interviewing multiple actors, both male and female, enables an exploration of a variety of meanings rather than narrowing down perceptions into singular or fixed categories (Cresswell 2009; Bryman 2008). Under this

[9] Nkedianye et al. (2009) found that in 2009, incomes from the Wildlife Lease Program accounted for 25% of household gross income, a considerable increase from 7% in 2004.

approach, it is the perceptions held by different actors that paint the picture of historical socio-political processes and inform the researchers understanding. This is considered a suitable approach for the study of (gender) equity and PES/REDD+ firstly, because multiple actors converge under varying institutional arrangements with often varying motivations for participation – thus having implications on equitable outcomes. Secondly, social constructivism allows the researcher to search for objectivity with respect to findings as they have been derived from in depth explanations of research subjects residing in various cultural contexts (Bryman, 2009).

1.5.2 Case Study Approach

The research adopted a multiple case study approach. Case studies are considered a valuable means by which to explore in situ, context-specific phenomena (Yin 2009). The multiple case study approach is endorsed in social research for its ability to capture a comprehensive understanding of complex social phenomena across different contexts (Sommerville et al. 2010; Gerring 2004). This study approach was deemed most suitable because the research focussed on two main phenomena - PES via direct payments for wildlife and REDD+ - implemented across separate geographic and institutional contexts of the same country. Although current literature is rich in case study material (Bedelian 2012; Mahanty et al. 2012; García-Amado et al. 2011; Gross-Camp et al. 2012), cross-cutting comparative analyses have so far not been widely conducted for PES schemes (some exceptions include Kissinger et al. 2013; Corbera et al, 2007; Brockhaus et al, 2015) especially in Kenya. The beauty of the multiple case study approach lies in its acceptance of incorporating a combination of methods (Berg 2001), which allows a unique opportunity for quality control through triangulation. As such, to study the context of equity in PES and REDD+, data was collected using a variety of qualitative methods ranging from focus group discussions to in-depth household interviews. While the specific combination of methods adopted is described under each chapter, a general overview of the study sites and the methods is presented in the following sections.

1.5.3 The Case Study Sites

Based on variations between wildlife conservancies and the limited number of REDD+ initiatives, the case studies were purposefully selected to reveal unique insights regarding institutional context and gender equity. The studies varied according to ecosystem service focus (wildlife/biodiversity and carbon) but also according to modes of design including rules and regulations, benefit distribution mechanism(s) and decision-making infrastructure. This study was conducted with respondents from the Kitengela Wildlife Lease Program, the Mara

North (wildlife) Conservancy, the Kasigau Corridor REDD+ Project and Imbirikani Group Ranch, covering three districts – Kajiado, Narok and Taita Taveta (Figure 2).

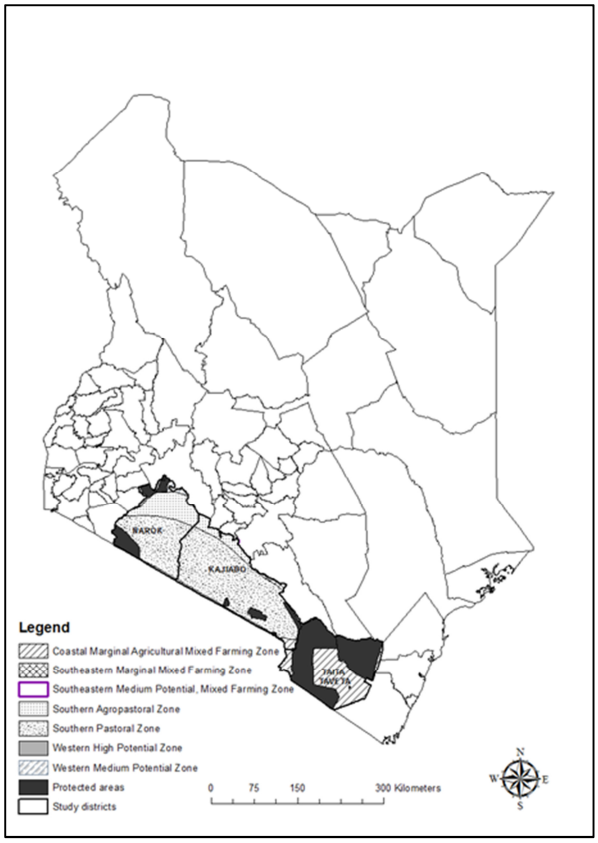

Figure 2: Map of Study Sites in Kenya

Source: Abisalom Omolo (ILRI)

The Kajiado and Narok sites are classified as semi-arid with mainly agro-pastoral livestock systems (Kitengela, Imbirkiani and Mara), while in Taita Taveta, the site is classified as low potential with a mixed-crop livestock system (Kasigau). A summary of all the sites and their key attributes is presented in Table 1 below.

The Kitengela Wildlife Lease Program (WLP)

WLP was established in 2000 on 60,000 acres of privately owned pastoral lands in Kitengela. The area was formally under a communal land tenure arrangement prior to subdivision into private parcels. Neighbouring Nairobi National Park, WLP is implemented on an important seasonal dispersal area and migration corridor for wildlife, as well as a livestock grazing area for pastoralists. A contractual agreement between the project intermediary and landowners stipulates quarterly payments in exchange for refraining from fencing, quarrying, cultivation

and land subdivision. These practices inhibit wildlife movement and survival, and sustainable livestock grazing (Swallow et al. 2010; Gichohi 2003). WLP was however donor-funded by GEF/World Bank which has not been revived since January 2012.[10] Nonetheless, the opportunity to evaluate the cumulative benefits from a gendered angle was deemed useful.

The Mara North Conservancy (MNC)

MNC was established in 2008 covering 74,000 acres of privately owned land. Formally the Koiyaki-Lemek Group Ranch, the private parcels consolidated under MNC currently constitute the largest conservancy in the greater Maasai Mara area regarding numbers of members (over 800) and high-end tourism lodges (12). Bordering the famous Maasai Mara National Reserve, wildlife biodiversity is rich within the conservancy. Individual 5 or 15 year lease agreements (legally binding) between title deed holders and land holding companies enable a monthly payment from tourism revenues to refrain from human settlement, wildlife poaching and livestock grazing which is restricted only to certain areas throughout the year.

The Kasigau Corridor REDD+ project (KCRP)

KCRP was established in 2005 and covers over 500,000 acres of dryland forest. Straddled between Tsavo East and Tsavo West National Parks, KCRP is the world's first REDD+ project to be awarded Voluntary Emissions Reductions to sell carbon on the international market. KCRP differs from the other case study sites because it is implemented on a variety of land tenure arrangements ranging from private to communal ranches (Njogu & Dietz 2006). Due to the diversity of arrangements, lease agreements with private landowners (ranch owners) and the project implementer allow for the delivery of direct benefits depending on the volume of sequestered carbon credits. Informal agreements with non-landowners enable the distribution of indirect carbon benefits through community development projects. As the only existing project selling carbon credits in Kenya and distributing benefits to landowners and local communities, this project presented a unique research opportunity to explore the various dimensions of equity.

Imbirikani Group Ranch (IGR)

[10] At the time of data collection, there were hopes for a possible next cycle of funding and a compensation scheme for livestock predation was still running under the same WLP infrastructure (The Wildlife Foundation as an intermediary and personal communication with the project implementers at the time).

IGR is located on over 300,000 acres of communally owned semi-arid pastoral land. Boasting over 8,000 members, the IGR is located neighbouring Amboseli National Reserve. At the time of the research, members were not receiving direct benefits from carbon credit sales as the project design phase was still under way. A wildlife compensation scheme was however operational based on payments from a high end-lodge within the group ranch. The opportunity to understand the equity context prior to scheme establishment was deemed significant for the study. The forthcoming project is to be an extension of the KCRP.

1.5.4 Data Collection

In this section, an overview of the data collection methods, sampling procedures and analysis is presented. Given the highly socio-political and sensitive nature of the research, and the need to ensure empirical rigor, it was deemed suitable to employ qualitative data collection approaches across multiple scales. Data was collected from the intra and inter household, and community levels. According to Torkelsson et al. (2008) and Doss et al. (2008), the use of intra household results in projects can improve multiple development outcomes, including but not restricted to, environmental conservation. The benefit of combining different methods and applying them across different scales is not only to capture a more comprehensive understanding of the phenomena under investigation, but also to compare, contrast and ultimately verify different results through alternative methods (Cresswell, 2009). To allow for quality control, follow-up data was collected by the researcher over a period of 11 months between November 2013 and January 2015 and further measures are described in Section 1.9.

The various data collection approaches are described below.

In-Depth Interviews

With reference to Gilbert (2001: 123), interviewing holds a “strong claim to being the most widely used research method”. An interview is defined as a systematic “conversation that has a structure and purpose” therefore moving beyond the conventional exchange of perceptions which represent everyday conversations. In-depth interviews use open-ended questions to collect rich qualitative information. To better capture complexity, more open-ended questioning is encouraged (Cresswell, 2009). This interview approach has been employed extensively in Grounded Theory (Glaser & Strauss 2009) and is combined with other qualitative research approaches (Charmaz 2006). In-depth interviews were adopted for this research to gain knowledge on processes and mechanisms that are highly social and political and may not be readily articulated by members of the society (Johnson 2002). Techniques to

collect rich data from individual household members have been adopted to solicit un-vetted responses on sensitive issues as well as gendered experiences (Quisumbing & Maluccio 2000), and tend to be favoured over group-based approaches.

The in-depth interviews collected data at the intra household level. Therefore within each household, interviews were conducted with the household head and their spouse(s).[11] The aim of the interviews was to capture perceptions of changes in gendered relations of production, access to and control over resources as well as processes for decision-making with regards to i) whether to join the PES scheme, ii) how to adjust labour allocation to suit PES regulations, and iii) how to spend PES payments. Gendered perceptions of how PES regulations and payments may influence the achievement of welfare and environmental outcomes were also solicited.

Gender Disaggregated Focus Group Discussions and Participatory Voting Activity

Focus group discussions (FGDs) with small groups of gender disaggregated individuals are an efficient and interactive group-based approach for generating contextual community-level information (Morgan 1998). In particular, FGDs are efficient because a wealth of information is generated during a single event. FGDs are interactive often because they are moderated in such a way as to encourage free discussion and are conducted in a location of convenience for local participants. Additionally, the interactive nature of FGDs is of interest and value to both participants and researchers alike (Berg 2001). A picture of an FGD in process is provided in Figure 3.

The gender disaggregated FGDs solicited information on changing labour patterns, access to key resources as a result of PES/REDD+ and overall perceptions of benefits and costs. As men and women have different roles and responsibilities, it was considered pertinent to disaggregate the groups.

[11] For purposes of this study, the definition of a household is a person or group of persons who usually live in the same compound (fenced or unfenced) and share a common source of food and/or income, and are answerable to the same head. It is important to note the three elements of this definition namely; 1) Do they live in the same compound? 2) Are they answerable to one head? 3) Do they share common source of food and/or income? If any of the answers to these questions is "No" then it is not one household. Whereas, a household head is defined as the senior-most member, who makes key decisions in the household and whose authority is acknowledged by other members.

Figure 3: Pictures of FGD with men and women men participants in the Mara and Kitengela

The second round of data collection involved a gender disaggregated participatory 'voting' activity. The aim was to capture perceptions of the rigidity of gender norms in each of the sites. Participants (up to 16) were presented with a series of statements regarding the norms on decision-making dynamics for income management, resource-use and labour allocation. Each statement was voted against a scale of 1 – 5 indicating strongly agree to strongly disagree. Each vote - represented by a kernel of maize – was dropped into a 'secret ballot' and at the end of each vote results were publicly tallied and discussed. Figure 4 provides a collection of pictures from the participatory voting activities.

Figure 4: Pictures of men and women participants during the participatory voting activity

Key Informant Interviews

Individuals with specialised knowledge on the PES/REDD+ context, history and institutional design were the primary respondents for these interviews. Mainly, semi-structured interviews were conducted with respondents. These semi structured interviews included a predetermined, but flexible checklist of questions which provided room to ask further probing

questions if new issues pertaining to the research emerged as the discussion evolved. This was a flexible approach to gather information from multiple research subjects that in some cases held conflicting viewpoints. For example, on matters of project participation, implementers from one scheme spoke very highly of participation by women; however, interviews with female spouses elicited conflicting responses. This allowed for follow up interviews and an expanded sample with other female key informants holding similar perspectives again using the semi-structured approach as a guideline.

Process Netmap

A second tool was also employed with key informants. Process Netmap (Figure 5) is an innovative and interactive mapping method for soliciting information about institutional arrangements and identifying the degree to which various actors have influence (power) over key design principles (Schiffer 2007). This tool was used to trace the processes the led up to the emergence of PES schemes and also identify the key actors in PES and REDD+ and their varying levels of power over equity outcomes (Schiffer & Hauck 2010). This tool is also increasingly used as a means to identify and address governance challenges in various agricultural and NRM settings (Schiffer et al. 2010; Schiffer & Waale 2008; Aberman et al. 2012).

Figure 5: Picture of Process Influence Mapping with Key Informants from Kitengela

Sampling

Due to the type of information sought across the various categories of respondents and methods, different sampling approaches were used. Intra household respondents were identified randomly drawn from project membership lists (Babbie 2007). However, in Kasigau, membership lists were not available and we adopted a purposive diversity sample (Weiss 1995). Due to the specialised nature of information required from the FGDs and the Key Informant interviews, purposive sampling was applied and for the Key Informants, snowball methods were additionally adopted. Purposeful sampling is important when seeking individuals with specialised knowledge on and experience with key aspects of the topics under study. While for FGDs, purposive sampling was conducted with participants who were stratified according to age and degree of knowledge about conservation activities to capture a wider variety of views for interaction.

As this is a qualitative study concerned more with capturing deep meanings rather than formulating generalised hypotheses, sample sizes tend to be considerably smaller than those required by quantitative studies. The concept of 'saturation' described by Glaser and Strauss shows how collecting more data does not necessarily equate to collecting more information of relevance to the issue under investigation. Despite the usefulness of this concept, practical guidance on what constitutes a 'sufficient sample size' is however not provided (Mason, 2010). Nonetheless, and more generally 15 respondents tends to be the minimum acceptable sample size (Guest et al, 2006 cited in Mason, 2010), whereas, reviewers of Grounded Theory studies show that between 30-50 (Mason, 2010) interviews is accepted. As the study collected data from respondents in four sites based on multiple criteria, the sample sizes varied per site and totalled 31 men and 31 women in the intra household interviews; six FGDs with men and six FGDs with women, and 12 respondents for the key informant interviews and the Process Netmap. A summary table is of these figures for each paper is illustrated (Table 3).

Table 2: Summary of Data Collection Samples

Method		Kitengela	Mara	Kasigau	Imbirikani	TOTAL
In-depth Intra Household Interviews (with scheme members)	♂	4	9	8	10	**62**
	♀	4	9	7	11	
Focus Group Discussion (members)	♂	2	2	1	1	**12**
	♀	2	2	1	1	
Participatory Voting Activity	♂	2	1	2	1	**12**
	♀	2	1	2	1	
Process Netmap	♂	1	2	1	1	**5**
	♀	1	1	1	1	**4**
Key Informant Interviews (with key stakeholders)		5	7	5	5	**12**

1.5.5 Data Analysis

Data obtained through interviews was recorded both by hand and with a recording device. Data was handwritten by a note taker who did not partake in discussions or interviews. Because respondents from three of the four sites spoke a Maa, the native language not known to the researcher, a translator was employed to relay the conversations from the respondents in real-time. This data was also captured in notes by the researcher. To ensure all the primary data was documented, data was recorded with the consent of respondents, who in majority of the cases accepted. There were however instances where some respondents declined being recorded and were uncomfortable due to the sensitivity of the information. In these cases, notes were taken instead. All the sound files were then transcribed verbatim by an independent translator. The transcribed data was collated for quality control and subsequently coded into thematic categories using a qualitative data software package Nvivo (Figure 6). Coding refers to labelling segments of data that depict recurring as well as unique thematic areas (Charmaz 2006).

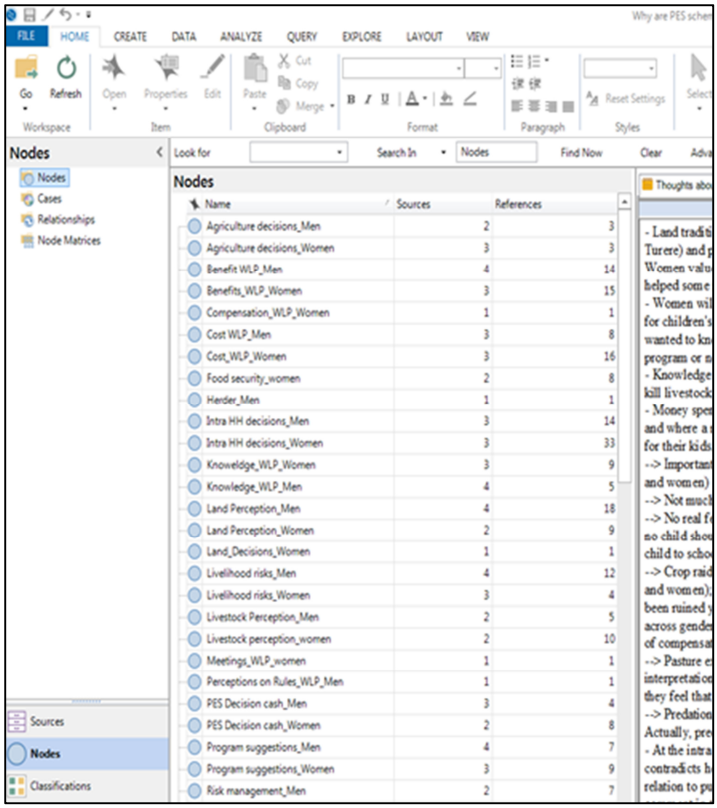

Figure 6: Screenshot of coded data in NVivo

The constant comparison method (Boeije 2002; Glaser & Strauss 2009), was then used to analyse the data according to the various coded categories. Since the study collects mainly qualitative data[12], analysis was conducted inductively, whereby trends were observed and theories and new conceptual framings were built from these observations. Grounded Theory offers a useful and appropriate method for conducting data analysis as shown by Petheram & Campbell (2010) on their study on local perceptions of PES in Vietnam, and others from the social science disciplines. Table 4 provides a summary of the data collection and analyses methods adopted for the study.

[12] Chapter 5 was based on both qualitative data collected by the researcher and quantitative data collected by her co-author.

Table 3: Summary of methods and analysis for each question

	Chapter 2 (Equity)	Chapter 3 (Gender-blindness)	Chapter 4 (Gender Framework)
Data Collection Methods			
In Depth Household Interviews	X	X	X
Focus Group Discussions	X	X	X
Key Informant Interviews	X	X	X
Process Netmap	X		
Participatory Voting Activity			X
Data Analysis Methods			
Content analysis using NVivo	X	X	X

1.6 Quality Control

While majority of the results were based on subjective meanings from respondents, the researchers adopted a number of strategies to ensure accuracy and credibility of the findings. Strategies included cross-referencing, triangulation, member checking and peer-debriefing. Many of these strategies reflect recommendations by Gibbs (2007 cited in Cresswell (2009) and are described below.

To ensure the reliability of the research, transcripts from the English and Kiswahili interviews and discussions were cross-referenced by the researcher with sound files to ensure consistency and identify any omissions; and for the Maa interviews, notes from the note-taker were corroborated with the transcripts from the independent transcriber and later verified by the researcher. In this instance, the independent transcriber serves as an external auditor of the data captured by the notetaker and the translator during the interview (Cresswell, 2009). As much of the research was conducted with a team of three or more members, a synthesis of findings was coordinated through daily meetings and communicative exchanges to streamline both notes and observations.

To ensure the validity of the data collected, the researcher employed triangulation approaches by using different sources of information (other respondents, secondary data) to build what Cresswell (2009) refers to as a "coherent justification of the themes". Triangulation refers to the application of "more than one method or source of data in the study of a social phenomenon so that findings may be cross-checked" (Bryman, 2009) and operates "within and across research strategies" (ibid). Some themes however were unique and were accepted as individual perception or world views. As part of the triangulation process 'peer debriefing' enabled the researcher to enhance the accuracy of the data by conducting follow-up interviews with purposefully selected key informants (Cresswell, 2009). .

A final approach applied was that of 'member checking' which was executed during the follow up field visit in 2015. A recap of the main themes emerging from the first round of data collection was shared with participants from each site and in some cases follow-up interviews with participants who wished to provide further comment were conducted. The opportunity to conduct follow up data was very helpful as it allowed for any discrepancies in the data interpretation to be explained.

The approaches adopted therefore go some length to ensure 'dependability' which is an important criterion for evaluating qualitative research (Bryman, 2009).

1.7 Ethical Considerations

Upholding the integrity of research and guarding against misconduct are among the key reasons for ethical concerns in social research (Cresswell, 2009). These reasons are further legitimised by the view that qualitative research is in many senses considered a 'moral inquiry' (Kvale, 2007 cited in Cresswell, 2009). Although institutional clearance is not a prerequisite for the university, several measures were taken by the researcher to ensure that principles of good practice were followed. Given the sensitive nature of the research it was important first to secure the consent of the research subject through full disclosure of the research project and request permissions to record. This enabled voluntary participation by all respondents. As data was collected from the intra household level, measures to ensure against the possibility of harm included protecting the privacy of participants through anonymity in recording, and also in some cases by conducting interviews in locations situated at a distance from male spouses. Other measures included gaining the consent of individuals in authority (gatekeepers), such as local chiefs and sub-chiefs (and at the household level, the gatekeeper often tended to be the male household head) and often this would be the first stop we would

make when we arrive at a new site. Many of these measures are recommended by Cresswell (2009) and Babbie (2007).

1.8 Structure of Thesis

As has been described above, the overall motivation of the study is to understand the gender equity dimensions within PES/REDD+ contexts in Kenya. The following description provides a synopsis of the subsequent chapters which form the main body of the thesis.

In Chapter 2, a historical overview of the emergence of PES/REDD+ actors is presented. The analysis of equity outcomes is then described in relation to the balances of power between existing actors in the PES/REDD+ landscape. In particular, the chapter draws the reader's attention to the role of applying an alternative institutional approach to PES/REDD+ research that focusses on social and political (informal) aspects rather than purely economic (formal) dimensions.

Chapter 3 delves deeper into the gender inequities identified in Chapter 2. This chapter presents an analysis of the gendered dimensions of PES/REDD+ by exploring the extent to which gender is integrated into program design and the reasons for perceptions of the distribution of gendered costs and benefits across the selected schemes are discussed. The informal factors that characterise gender imbalances are therefore emphasised.

Chapter 4 draws from the findings in Chapters 2 and 3 to explore the intersection between gendered norms and women's agency - two useful but often neglected variables with respect to gender and NRM research. The purpose of this chapter is to apply these variables as a barometer to guide the selection of suitable gender strategies for PES/REDD+ schemes.

Chapter 5 collates the insights from the case studies in the form of a general discussion. The unique results are situated alongside key debates and similarities and differences are discussed. The limitations of the study are also presented in this final chapter and the efforts to minimize limitations described. The chapter closes with the overall conclusions from the study, and recommendations from the findings are presented.

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2 EQUITY OUTCOMES IN TWO PAYMENTS FOR ECOSYSTEM SERVICE SCHEMES IN KENYA

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Abstract

Payments for Ecosystem Services (PES) are considered promising instruments for environmental conservation and addressing social and economic goals, including equity. However, the local-level institutional conditions that are necessary for the achievement of equitable outcomes when using such instruments remain poorly understood. This study selects two cases from Kenya to illustrate how historical processes influence present day equity outcomes. The results show that despite very similar land tenure origins, the two schemes differ considerably regarding both procedural and distributional equity. Institutional factors, mainly perceptions of land value over time and bargaining processes are identified as the determinants of the differences in equity outcomes. The study recommends the integration of mechanisms that reconcile both formal and informal institutions, such as land tenure distribution and cultural norms in design and implementation of PES schemes in order to better achieve equity.

Keywords: Equity; Institutions; Land tenure; Payments for Ecosystem Services; Power

2.1 Introduction

Payments for Ecosystem Services (PES) include schemes such as Reduced Emissions from Deforestation and Forest Degradation (REDD+) and payments for wildlife services. PES are considered promising conservation tools which reward resource users financially or through other means, on condition that conservation of natural resources and/or reduced emissions of carbon is achieved (Wunder 2005; Landell-mills & Porras 2002; Pascual et al. 2010; Pagiola et al. 2005; Wunder 2015). But are PES losing their lustre? In principle, the main assumption is that economic incentives delivered through markets, coupled with conditionality clauses, are sufficient drivers for the voluntary supply and demand of ecosystem services.[13] In

[13] The Millennium Ecosystem Assessment defines ecosystem services as "the benefits people obtain from ecosystems". These services include, "provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational,

practice, payments are rarely made through the ideal type market exchange scenario (McElwee 2012; Fletcher & Breitling 2012), rendering the majority of these schemes, especially in developing countries 'market-like' (Wunder, 2007: 50). Nonetheless, their attractiveness as conservation mechanisms with the potential to offer co-benefits has earned these approaches the label 'win-win' (Muradian et al. 2013). Given the challenges in developing nations regarding reconciling local resource-users' needs with those of national/global conservation, PES have received tremendous support for overcoming fundamental flaws of state and community-based approaches (Ferraro & Kiss 2002) - at least conceptually.

The widespread acceptance of PES is however considered to be occurring at the expense of overlooking various institutional factors relevant for conservation outcomes (Hendrickson & Corbera 2015). Enthusiasm for PES adoption diverts attention away from the role of power asymmetries and the question of how to implement substantial institutional changes to significantly and sustainably reduce human pressure on ecosystems without undermining social benefits. Critics challenge market efficiency assumptions stating that 'commodity fetishism' masks the power imbalances that influence participation in decision-making (Brockington 2011; Norgaard 2010; Mcafee 2012). An institutions perspective lends itself to the analysis of market-based schemes because most are socially constructed (Muradian et al. 2010), and in developing countries are strongly dependent on community and state involvement (Sommerville et al. 2010). Therefore, the extent to which PES can address complexities depends on the interplay between formal institutions such as legal frameworks and land/resource tenure, and informal institutions such as traditional norms and customs (García-Amado et al. 2011; Corbera et al, 2009).

It is these institutional aspects that structure equity in access to benefits, and decision-making on PES (García-Amado et al. 2011; Lipper & Neves 2011). Much debate surrounds the extent to which PES ought to and can achieve 'win-win' outcomes (Peskett et al, 2011). Some argue that the purpose of PES is to meet environmental outcomes at minimum cost; whereas, others argue that overlooking aspects of inequity undermines the legitimacy essential for achieving sustainable environmental outcomes. Resting on principles of environmental justice, equity in terms of distribution and procedure is increasingly considered an important aspect of effectiveness. Equity is especially significant within REDD+ where adhering to social

aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling" (Millennium Ecosystem Assessment 2005).

safeguards is a prerequisite (McDermott et al. 2012; Cotula & Mayers 2009). Approaches that therefore move beyond addressing the symptoms of environmental degradation (deforestation; wildlife poaching) to tackle the underlying causes of the inequities driving environmental degradation are therefore promoted (Di Gregorio et al. 2013).

While existing contributions advance awareness of how institutional conditions under PES can deliver cost effective conservation outcomes (Paavola & Adger 2006; Vatn 2010) and poverty reduction (Wunder 2008; Pagiola et al. 2005), rarely is explicit attention dedicated to the local-level dimensions of PES schemes. Various calls have been made to address this limitation, including requests for, i) in-depth process-oriented analyses to highlight the institutional factors mediating outcomes and; ii) case-specific institutional histories based on the view that global standards for design and implementation do not guarantee uniform emergence and operation of local level PES schemes (Chhatre et al. 2012; McDermott et al. 2012; Peskett et al. 2011).

This paper aims to fill this gap by adopting a case study approach to review equity in terms of procedure and distribution. We conduct a process oriented analysis of two successful 'market-like' conservation schemes in Kenya. As market-based tools are a relatively new addition to the mosaic of conservation approaches in Kenya, there is much interest in their potential for overcoming the biases of earlier coercive methods. The selected schemes are implemented within contexts that share similar historical origins with respect to land tenure. However, we ask why - despite being subject to the same land tenure reform policies – are the sites characterized by considerably different distributional and procedural equity outcomes? Our objective is to identify the institutional context within which actors emerged, and how actors interact to influence procedural and distributional outcomes. We position our analysis within the ongoing debate on the importance of equity in PES and begin to respond to calls for a richer contribution to research on local-level institutional dimensions.

We begin by reviewing the literature on institutional analyses of PES. We focus on the factors influencing the transition from analyses of economically-driven aspects to those that give cognizance to equity factors. We then present an overview of the methodology followed by our results. The penultimate section presents a comparative analysis and discussion, followed lastly by our conclusions.

2.2 Review of institutional analyses of PES

Institutions constitute the written and unwritten rules that influence human behavior. They are critical under PES analyses because they regulate human interaction with natural resources (Corbera et al. 2009; Dietz 2003). Although highly relevant, institutional factors tend to be undervalued in research on PES (Pascual et al. 2010; Hejnowicz et al. 2014). This is possibly because institutions - especially at the local level – are rarely explicitly defined but instead, implicitly alluded to; disentangling findings for concrete interpretation remains therefore challenging. This section reviews the literature on dominant debates on PES, their influence over the methodologies applied for evaluations and gives emphasis to the growing importance of considering institutional aspects for understanding equitable outcomes.

2.2.1 Institutional Analyses of PES

The relevance of institutions that promote economic efficiency and social outcomes through market-based conservation represents a subset of a larger debate setting apart two schools of thought. This debate shapes the views of policy makers, donors and other stakeholders on aspects including the problem definition and associated research methodologies; thus explaining why certain methods and values are prioritized over others (Visseren-Hamakers et al. 2012; Rodríguez-Labajos & Martínez-Alier 2013). Economists[14] promote the separation of efficiency from social and equity objectives, providing justification that market-based tools aim to address environmental problems (Wunder 2007) and social objectives are secondary by-products (Wunder 2013; Engel et al. 2008; Pagiola et al. 2005). It is therefore considered ambitious to expect PES to also be 'multipurpose instruments' for environmental conservation jointly acting as "levers for social justice and poverty alleviation" (Karsenty et al, 2014: 26).[15] Some economists do however recognize that implementing environmental management will be largely influenced by institutional factors (Da Motta, et al. 1999). But because PES schemes are viewed chiefly as tools for addressing environmental problems at minimum cost, institutional analyses tend to focus on transactions costs and economic efficiency (Wunder & Albán 2008; Paavola et al. 2006).

[14] Sometimes referred to as 'REDD+/PES advocates' (Den Besten et al. 2014), or actors belonging to the 'market liberal' worldview (Visseren-Hamakers et al. 2012).

[15] Where combined objectives have been attempted, trade-offs can occur between environmental improvement and rural development (Bulte et al. 2008; Kosoy et al. 2008), and between economic efficiency and social inclusion (Clements et al. 2010).

By contrast, rights-based advocates[16] are strongly in favor of combining social and environmental objectives promoting the expansion of institutional analyses into spheres of economically unconventional territory. They recognize the existence of social injustices and advocate for broad integration of institutional knowledge to inform design and implementation (Corbera et al. 2009; McDermott et al., 2012; Visseren-Hamakers et al., 2012). Much of their advocacy is premised on principles of equity, which constitute distributive and procedural aspects (McDermott et al, 2012). Procedural equity refers to the processes of negotiation in scheme establishment. Meaningful recognition, inclusion and participation in decision-making by all stakeholders thus enhance procedural equity regarding design, administration and conflict resolution (McDermott et al, 2012). Distributive equity refers to the allocation of costs, risks and benefits resulting from implementation and can be evaluated across the principles of equality, social welfare, merit and need (ibid).

The main challenge faced in integrating equity is the creation of mechanisms which grasp complex local dynamics including but not restricted to, resource ownership, access, gender, ethnicity and cultural norms that will influence and be influenced by the "marketization" of ecosystem services (Adhikari & Boag 2012; Corbera et al. 2007). In particular, gender as a category of social differentiation influences access to and control over resources, and interest in how PES can avoid reinforcing existing inequities is increasing (Kariuki & Birner 2016; Adhikari & Agrawal 2013).

Thus, depending on how the objectives of PES are framed and the integration of formal and informal institutional knowledge, the ways in which equitable outcomes emerge or are obscured is of much importance. Borrowing principles from the right's based coalition, this paper aims to empirically assess two market-like schemes in Kenya and identify which institutional conditions influence equitable outcomes.

2.3 Methodology

We present the case studies followed by a description of the research tools, methodology and analysis.

[16] Sometimes referred to as 'social greens' (Clapp & Dauvergne. 2005) or 'socialculturalists' (Shankland & Hasenclever 2011).

2.3.1 Study Sites

Research was carried out in two prominent market-like schemes in Kenya, Mara North Conservancy (MNC/Mara), a payments for wildlife service scheme; and Kasigau Corridor REDD+ Project (Kasigau) in Narok and Taita Taveta Counties respectively (see Figure 6).

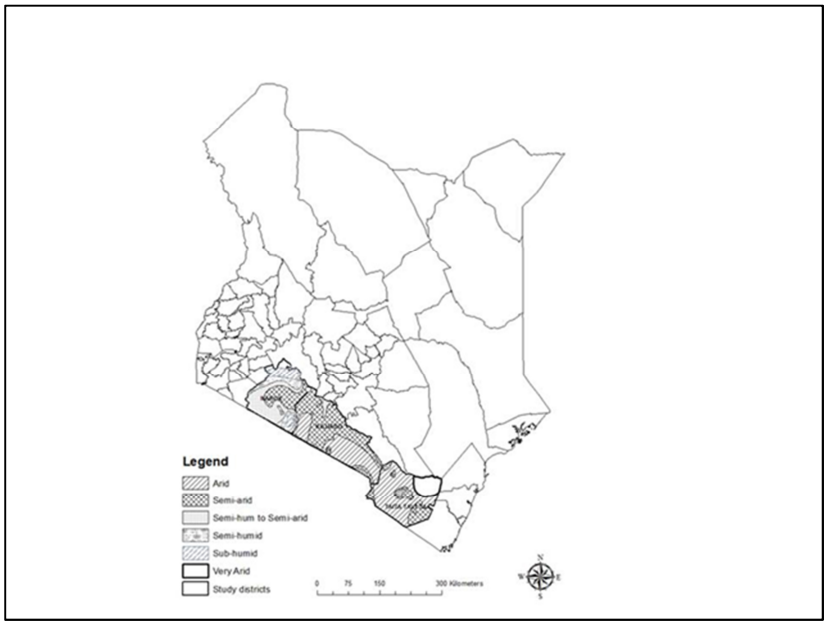


Figure 7: Map of case study sites

Source: Abisalom Omolo (ILRI)

Both sites are located in semi-arid and semi-humid rangelands in Southern Kenya (Figure 7). They boast a rich biodiversity and neighbor protected areas. The schemes however vary according to land tenure arrangement, ecosystem service focus and benefit-distribution mechanism. Mara is implemented on 74,000 acres of privately owned land held by 800 individual households from the pastoralist Maasai ethnic group. Each member household owns approximately 150 acres. Members contractually receive monthly payments derived from 12 high-end tourist camps that are part of the conservancy's low-density wildlife tourism landscape. Contracts give the project implementer (a private company) non-consumptive resource-use rights otherwise held by the landowners, in exchange for the defined payments which are delivered through bank transfers. Regulations include the avoidance of land subdivision, wildlife poaching and restrictions on settlement and grazing (permitted only in designated areas). The conservancy has a mandate to promote economic prosperity, community empowerment and sound ecosystem management (Mara North Conservancy n.d.).

Kasigau is implemented on 500,000 acres across 14 ranches with different tenure arrangements. Tenure includes ranch ownership by individuals (one or two persons), private companies (maximum 50 shareholders), and Directed Agricultural Companies (with no legal limit on membership, but such a limit can be imposed through internal regulations) (Njogu & Dietz 2006; Chomba et al. 2016). Carbon rights agreements secured with ranches stipulate refraining from deforestation, and particularly charcoal burning, settlement and wildlife poaching. Ranch-owning households benefit directly (cash) through contractual agreement receiving one-third of total carbon credit sales. An additional 115,000 households lack formal tenure and live in settlement areas surrounding the project. Conceptually one-third of carbon monies benefits communities through initiatives of their choosing including water, health and education (Chomba et al. 2016). The remaining third is allocated to the private implementing company.[17] The project aims to protect forests and therefore sequester carbon, secure a safe habitat for wildlife and promote community development (Wildlife Works, website) (Table 5).

[17] http://www.wildlifeworks.com/saveforests/community_kasigau.php

Table 4: Summary of Case Study Characteristics

Site Characteristics	**Mara**	**Kasigau**	
Ecosystem service focus	Biodiversity	Carbon, biodiversity	
Status	2009 - present	2005 - 2035	
Number of members	800	4,300 (ranch owning families) 115,00 (landless)	
Main livelihood	Pastoral	Agropastoral	
Payment source and delivery	Private (tourism); intermediary (private company)	Private (international carbon market); intermediary (private company)	
Tenure	Privately owned land	Various categories of privately owned land	
Land amount (acres)	74,00	500,0000	
Land distribution	Relatively equal	Relatively unequal	
Land use regulations/restrictions	Sale, settlements, grazing	Deforestation, charcoal burning, settlement, wildlife poaching	
Benefit distribution	Direct (USD 1.3 per acre, monthly)	Direct (USD 4.5 per tonne)	Indirect through community projects

The different project areas were subject to one of Kenya's earliest rangeland reforms - the 1968 Land (Group Representative) Act.[18] However, as the above description shows, the existing tenure arrangements vary considerably. As both schemes are considered 'successful', we were interested in the extent to which this reflects different dimensions of equity. Given the importance of secure land tenure for PES participation, a historical analysis

[18] The Land (Group Representative) and Land Adjudication Act was enacted in 1968 by the Kenya government. The 1968 Land (Group Representative) Act aimed to commercialise subsistence livestock production systems, reduce environmental degradation and provide incentives for long-term investments through collateral (Mwangi 2007a; Njogu & Dietz 2006).

of the conditions under which PES mechanisms emerged and enabled equitable outcomes was considered important.

2.3.2 Data Collection, Sampling and Analysis

Data was collected using innovative qualitative approaches to identify the relations of power under the reviewed schemes and to identify factors leading up to the identified equity outcomes. An interactive mapping tool called Process Netmap (Schiffer & Hauck 2010) was applied with project implementers and beneficiaries/contract-holders to capture perceptions of power over procedural and distributive equity. Participants (up to 10 stakeholders) were asked to trace scheme establishment by identifying actors and their relationships over time; each relationship was illustrated on paper and perceptions of the forces driving equity outcomes were debated and ranked. The influence of the identified actors over equity outcomes were identified on a scale of 1 to 6 (1 indicating the lowest and 6 indicating the highest influence). Key informant interviews were conducted to corroborate evidence regarding land tenure and scheme formation. Further contextual information regarding scheme establishment, benefits and resource use was gathered from participatory community-level discussions which were gender-disaggregated to capture important categorical differences. The lowest scale of data was collected from the household level using in-depth interviews. Open-ended questions were posed to household respondents to solicit rich information on procedural and distributional aspects (Charmaz 2006).

The respondents for Netmap, key informant interviews (KII) and group discussions (GD) were purposively sampled using a snowball method to capture a well-represented and informed selection. Household (HH) interviewees were randomly selected from scheme membership lists. Due to the absence of membership lists in Kasigau, we used a purposive diversity sample (Weiss 1995) to select household respondents. In total, we conducted five Netmaps, 25 KIIs, 14 GDs and 37 in-depth HH. Across approaches and consistent with the sampling adopted, the principle of saturation applied when a satisfactory number of respondents from the sample offered the same information regarding the questions raised. Quality assurance included triangulation of methods and follow-up data collection regarding local perceptions. Data was transcribed and analyzed inductively using content analysis (Glaser & Strauss 2009) enabled through the use of qualitative data analysis software (NVivo).

2.4 Results

The results for each scheme are presented in two sections which follow. The perceptions of the status of equity and the balance of power between actors from each scheme are presented first. In the second section, the factors that led to the observed equity outcomes are explained by analyzing the unique contexts in which the schemes were implemented.

2.4.1 Perceptions of Equity in MNC

To analyze distributional equity, we considered the benefit-sharing arrangement among landowners, whereas procedural equity was analyzed through perceptions of powers and influence of different actors in decision-making positions. The Netmap facilitated participatory discussion where respondents identified each actor and the nature of their interactions (depicted by the different boxes and colored arrows) and the perceptions of the actors' influence over current equity outcomes (depicted by the differently sized numbered circles) (Figure 8).

Distributive and procedural equity outcomes

Distributive equity was of high importance in the Mara. Respondents emphasized that the current revenue-sharing arrangement from tourism-derived incomes was largely equitable across landowners. The arrangement was attributed to the establishment of formal institutions. Predominantly, the implementing agency (Seiya Limited) was credited for facilitating contractual agreements between landowners and tourism operators. These legally binding contracts remitted a regular, fixed amount of revenue from tourism to the landowners. The gendered dimensions of distributive equity were however more imbalanced. The results show that approximately two percent of the contract holders were women, mostly widows who often granted responsibility for benefit collection to male relatives (GDs, KII 5, 2, 3). Furthermore, in male-headed households, tourism benefits were distributed to the household head, rendering the majority of women indirect beneficiaries. Regarding distribution, equity in the Mara was therefore achieved among male landowners with women's only access to benefits mediated through male household heads.

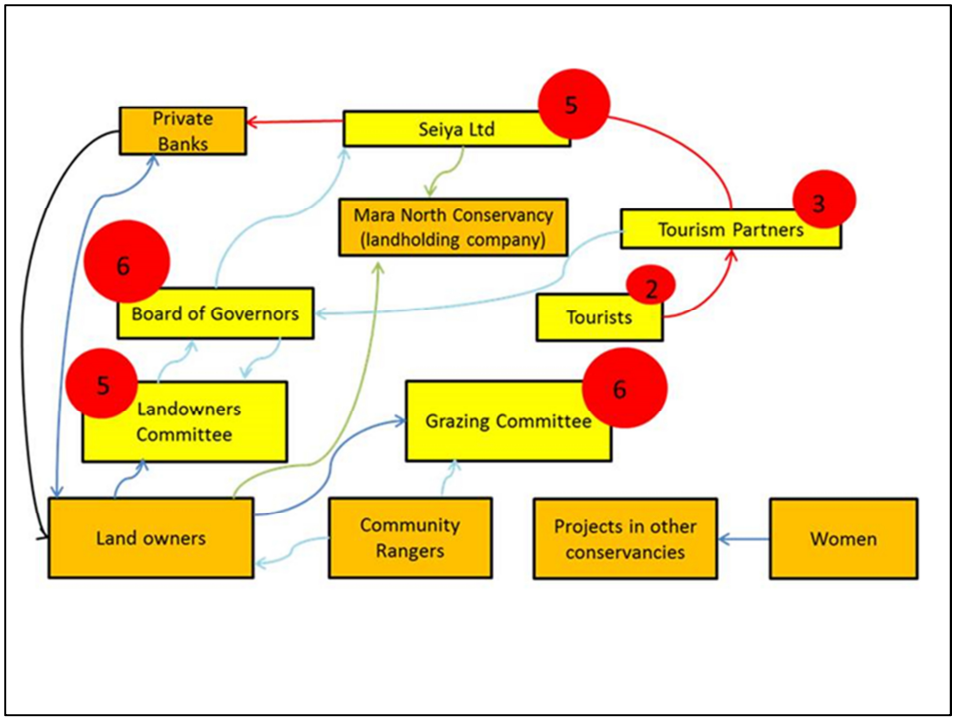


Figure 8: Mara Netmap of actors, relationships and current levels of influence over equity outcomes

To capture perceptions of procedural equity, respondents identified decision-making mechanisms and described their level of accessibility. Although an elaborate decision-making infrastructure existed, there were clear reservations regarding its contribution to procedural equity. The decision-making infrastructure was characterized by an arrangement between local and private actors. As the Netmap illustrates, a Board of Governors elected by the Tourism Partners, collaborates with the Landowners Committee who are elected (in principle) by landowners to represent their interests. Resource-use regulations are enforced by the Grazing Committee established to manage a rotational grazing program and work with a network of community rangers. The community rangers liaise with landowners on the locations open for grazing throughout the year. Respondents however lamented that accessing information and resolving conflicts under the described framework remained limited. For example, contrary to the expectation of annual meetings, only in 2014 was the second annual general meeting held (KI 5). Respondents therefore considered mechanisms for ensuring procedural equity as somewhat insufficient.

Influence of actors over equitable outcomes

To better understand the results on distribution and procedure, participants were asked about the distribution of power between actors who influence equity outcomes. Key categories for assessment included distribution of tourism revenues and meaningful access to resource-use and decision-making processes. The Board of Governors and the Grazing Committee were identified almost unanimously as having the highest influence levels (awarded 6 on the influence scale). Both groups of actors were perceived as powerful enough to influence distributive equity, specifically regarding payments and resource-use. This was followed by Seiya Limited jointly with the Landowners Committee (awarded 5 on the influence scale) who represented landowners in decision-making. Surprisingly, even though tourists provided income, their position of influence over equity outcomes was considered the lowest - mainly because the contractual benefit-sharing arrangement stands irrespective of tourism volumes or revenue. The Tourism Partners were awarded slightly more power for managing revenue distribution jointly with contract design. We were unable to solicit sufficient information to complete a Netmap with women because of cultural norms that restrict their access to knowledge regarding the conservancy (GDs; KIIs 5, 2, 3).

The results imply that influential actors were more inclined towards securing distributive equity among male landowners, even though this was secured at the expense of procedural equity. Distributive inequity was raised in discussions frequently. Respondents revealed that members of the Landowners Committee and the Board of Governors were prominent and influential (as far as securing distributive equity) but were often unavailable. Respondents thus complained that contract-related queries fell on deaf ears, with liaison managers frequently unreachable (HHs 6, 8, 11, 15). Furthermore, despite the fact that landowners agreed to contract terms read to them at a public meeting, none of the respondents retained a copy of the contract (HHs 5, 9). Some respondents commented that retaining contracts was not permitted (HHs 15, 4), while others expressed a lack of clarity on the 'correct' procedure (HHs 7, 9, 12, 13). Despite these inconsistencies, the findings do however show strong support for actors influence over equitably distributed payments and regulations under the controlled grazing plan, which combined present an effective means to ensure contract compliance.[19]

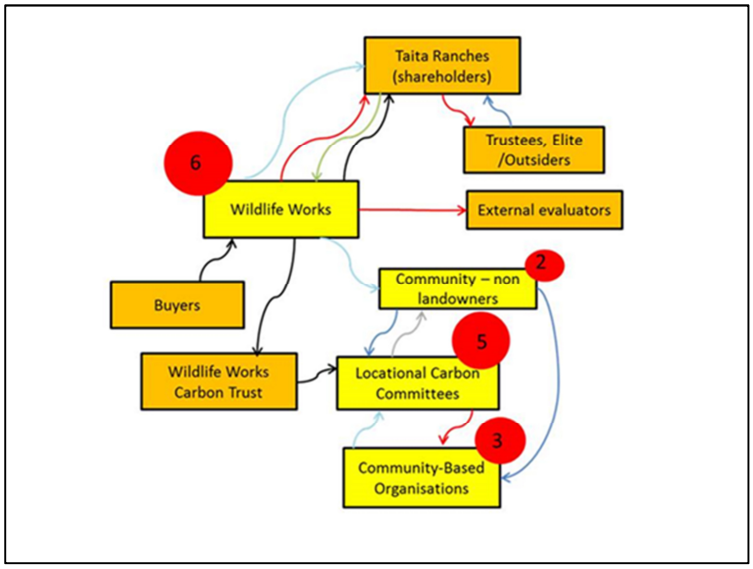
[19] There were however exceptions. Violations to restrictions included sale of land within the conservancy; and frequently cited cases of herders grazing outside designated areas, where rangers were obligated to impose

2.4.2 Perceptions of Equity in Kasigau

Interpreting the Netmap using the same approach as was done above, the results from Kasigau are presented in the following section and reveal entirely different equity outcomes compared with the Mara (Figure 9).

Distributive and procedural equity outcomes

Distributive equity was analyzed through land tenure status and the distribution of carbon revenues. The results show a profoundly uneven distribution of benefits amongst the main actors attributed to the concentration of land ownership (through ranch registration) among a small elite. Landownership was characterized by 4,300 ranch-owning households compared to over 100,000 non-ranch owning households (KII 5). The Netmap (Figure 9) illustrates the distribution of carbon monies through a three-way revenue sharing arrangement between the landed (ranch owners and shareholders), the project implementer (Wildlife Works) and the landless community members. Due to insecure land tenure, the majority of community members were rendered residual claimants of indirect benefits. Revenues for community projects (such as employment, school bursaries and social infrastructure) were only made available after monies were allocated to the ranches and the project implementer. Identified as the main drivers of deforestation, landless communities were incorporated into the scheme as beneficiaries and considered an important approach to avoid emissions. Irrespective of this important design feature, the existing revenue-sharing arrangement was still identified as largely skewed towards project costs and ranch payments (KIIs 7, 9, 10).



agreed-upon fines (Key Informant 5); 'night grazing' in the neighbouring Maasai Mara National Reserve was a widely accepted practice.

Figure 9: Kasigau Netmap of actors, relationships and current levels of influence over equity outcomes

Procedural equity was captured by exploring the institutions in place for distributing benefits and their ease of accessibility for community-level decision-making. The findings show that procedural outcomes were perceived of more favorably in Kasigau compared with the Mara. The Netmap illustrates the existing arrangements for the transparent distribution of carbon benefits. The Locational Carbon Committees (LCCs) comprised of elected community members and were established to distribute benefits through community projects. The LCCs collaborate with local Community Based Organizations (CBOs) to identify required projects. Respondents considered decision-making as fairly equitable because communities were invited to elect LCC members in accordance with affirmative action principles regarding gender representation. Communities were also invited to submit proposals to the LCCs for desired projects to be implemented from carbon monies. Therefore the results reveal that procedural equity was actively promoted through what were often considered meaningful elections and meetings which were attended by both men and women.[20]

Influence of actors over equitable outcomes

When Kasigau respondents were asked which actors influence equity outcomes, results significantly differ from the Mara because of considerable imbalances of power across actors. The project implementer was identified as having the greatest level of influence over the sale of credits, the distribution of revenues and also in establishing the institutional structure to facilitate procedural equity. The LCCs were found to have the next highest level of influence (awarded 5 on the influence scale), specifically over distributional outcomes and their role in prioritizing projects. CBOs were identified as slightly less influential than the LCCs over equity outcomes as their main task was to implement pre-selected projects (awarded 3 on the influence scale). Unsurprisingly, the individual (landless) community members viewed themselves having the least amount of leverage over carbon benefit distribution.

Even though distribution was largely inequitable, respondents perceived a significant reduction in deforestation activities within the project sites.[21] Respondents did however

[20] Participant observation from the authors confirms that women attending community meetings actively participated.

[21] However, study respondents recognised and admitted to the occurrence of a considerable degree of charcoaling activities outside project areas (men and women GDs; KII 7; HHs, 19, 21, 29, 30).

highlight a number of governance challenges. Examples included county representatives attempting to use CBOs for political mileage (KIIs 7, 11, 12, 13; GDs) and cases of patronage between LCCs and CBOs contributing to implementation glitches (KII 14). To safeguard against corruption, Standard Operating Procedures were implemented and subjected to annual amendment to limit the likelihood of repeated incidences.[22] Overall, the results from Kasigau show that mechanisms to enable procedural equity for the landless were much more prominent despite the inequitable distribution of land and direct carbon revenues.

2.4.3 Explaining Equity Outcomes through an Historical Overview

Our results so far demonstrate considerable differences in equity outcomes and the balance of power between actors from the two schemes (Table 6). In the Mara, perceptions show that although women were excluded, land and benefits were evenly distributed amongst male members. The procedural mechanisms in place were however deemed inadequate. While in Kasigau, the unequal distribution of land and benefits was compensated for by procedural mechanisms related to benefit distribution through carbon-funded community projects. We therefore question why - despite originally being subject to the same land reform policy – are the sites characterized by such different equity outcomes? To better answer this question, we turn to the second aspect of the Netmaps, namely tracing the processes leading up to scheme establishment. Figures 10 and 11 show the step-by-step process that occurred from ranch inception, through to scheme establishment. The numbers assigned to each arrow indicate the sequence of events and correlate with the different stages of tenure development. We also integrate a detailed account of communities' perceptions assembled through in-depth interviews and group discussions.

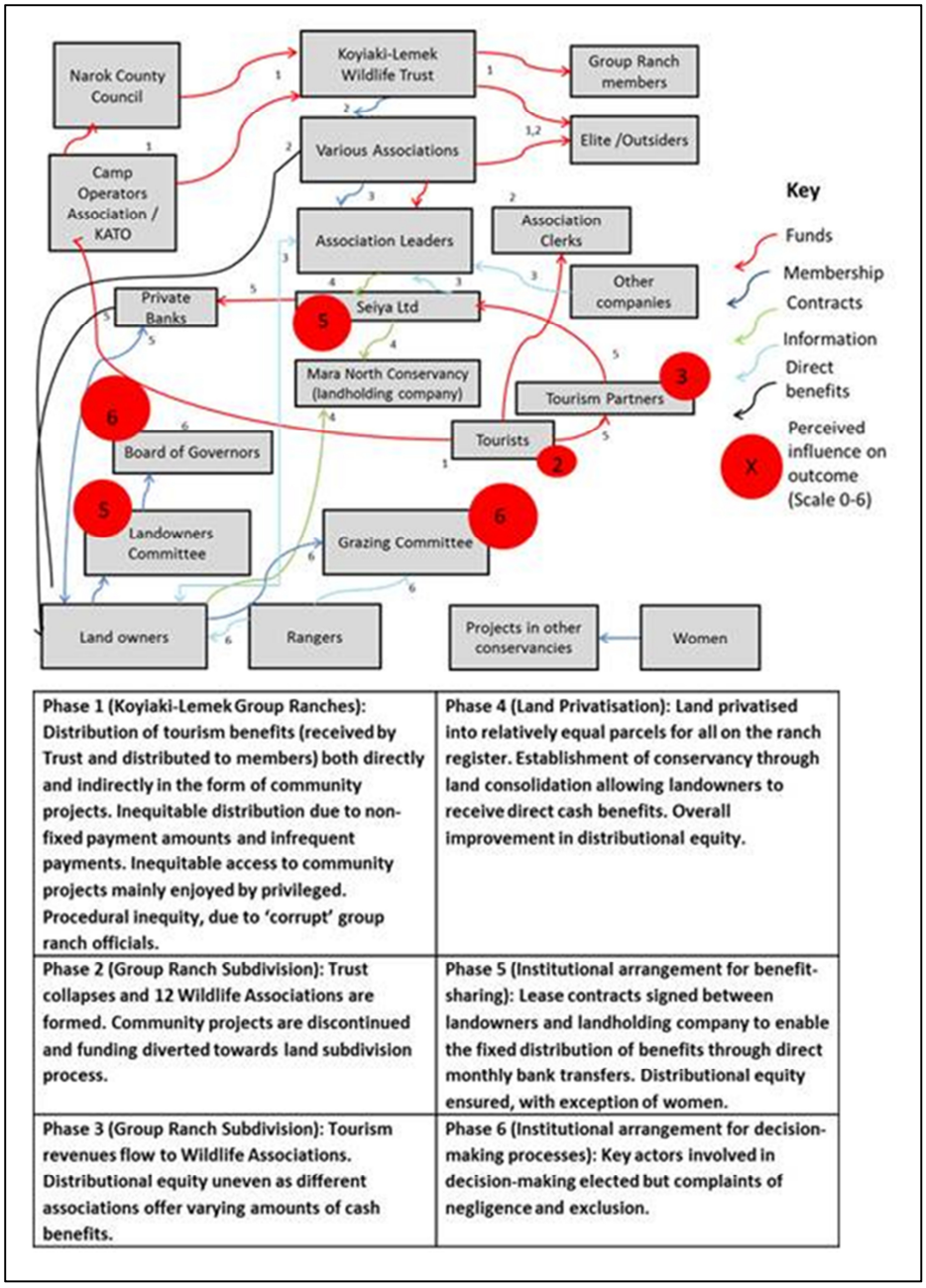
Table 5: Summary of the existence (✓) or non-existence (X) of distributive and procedural outcomes (according to stage of land tenure)

Case study	Land tenure	Distributive equity (land)	Distributive equity (revenue-sharing)	Procedural equity (meaningful participation and representation)
Mara	Group ranch	Communal	X	X

		(ranch membership); evenly distributed		
Kasigau	Group ranch	Communal (ranch membership); unevenly distributed	X	X
Mara	Private (individual)	Relatively even distribution	✓	X
Kasigau	Private (individual, company, shareholders)	Relatively uneven distribution	X	✓

Mara Phase 1: Koyiaki-Lemek Group Ranches (early 1970 – mid-1990)

To understand why current benefits were evenly distributed amongst landowners in the Mara and women largely excluded, a historical sequence of events provides useful insights. The ranches were established in the 1970s and early institutional arrangements were characterized by group ranch membership. Under private title, ranches were collectively owned by registered members and managed by elected committees. With the exception of widows, membership was restricted to men over 18. Contrary to expectations, the group ranches were characterized by lack of accountability and transparency; especially with regard to tourism revenue distribution and ranch leadership (KIIs 1, 2). Dominant perceptions amongst respondents were that the ranches were managed under a hierarchical power structure and that benefits provided to ordinary members were minimal. Interviewees recall that ranch officials were rarely elected and together with other local elites, cemented their positions of power, which were frequently exploited for personal gain (GD).



Phase 1 (Koyiaki-Lemek Group Ranches): Distribution of tourism benefits (received by Trust and distributed to members) both directly and indirectly in the form of community projects. Inequitable distribution due to non-fixed payment amounts and infrequent payments. Inequitable access to community projects mainly enjoyed by privileged. Procedural inequity, due to 'corrupt' group ranch officials.	**Phase 4 (Land Privatisation): Land privatised into relatively equal parcels for all on the ranch register. Establishment of conservancy through land consolidation allowing landowners to receive direct cash benefits. Overall improvement in distributional equity.**
Phase 2 (Group Ranch Subdivision): Trust collapses and 12 Wildlife Associations are formed. Community projects are discontinued and funding diverted towards land subdivision process.	**Phase 5 (Institutional arrangement for benefit-sharing): Lease contracts signed between landowners and landholding company to enable the fixed distribution of benefits through direct monthly bank transfers. Distributional equity ensured, with exception of women.**
Phase 3 (Group Ranch Subdivision): Tourism revenues flow to Wildlife Associations. Distributional equity uneven as different associations offer varying amounts of cash benefits.	**Phase 6 (Institutional arrangement for decision-making processes): Key actors involved in decision-making elected but complaints of negligence and exclusion.**

Figure 10: Netmap results for the processes leading up to Mara establishment

Evenly distributed membership therefore failed to guarantee evenly distributed tourism revenues or promote inclusive decision-making processes. Phase 1 and the corresponding arrows in the Netmap (Figure 10) reflect how discontent gave rise to the formation of the Koyiaki-Lemek Wildlife Trust in 1995. The Trust brought together leaders from the two ranches to facilitate a fairer distribution of funds generated from game-viewing fees and tourist facilities located within the ranches. According to respondents, the establishment of the Trust enabled members to gain better access to revenues. All members received a share of revenues approximately every three months ($50 – $300). However distributive equity was

said to be hindered through nepotism and patronage which were perceived as the primary means through which benefits were accessed (HHs 2, 7, 15). These inequities reinforced unequal power relations between the few highly influential and connected ranch officials, other local elite and members. At this early stage we begin to understand the roots of distributive equity as being determined by group ranch membership and the roots of procedural (in)equity as being determined by power asymmetries between elites, ordinary male community members and women.

Mara Phases 2 - 6: Group ranch subdivision (1998 – 2010)

Given the observed inequities, pressure to gain control over land and associated benefits reached a pinnacle in the early 1990s leading to a government-backed move for privatization (KIIs 1, 2, 3). During this second phase, a formal process of land subdivision was initiated which transformed group ranch membership to individual landowner status (arrow 2). According to the majority of respondents, most members supported the initiative once agreements were arrived at to subdivide land into equal parcels of 150 acres. However, to remunerate surveyors and cover administrative costs, funds were diverted from the Trust, which ceased direct payments to members (HHs 2, 5, 7, 17). The subdivision process created new avenues for exploitation between surveyors and other powerful elites from within and outside the Koyiaki-Lemek area.[23] Nonetheless, the majority of members received relatively equally sized parcels. Unmarried women were excluded on the basis of gender-biased inheritance policies which restricted ownership only to those who were on the group ranch register (KIIs 2, 3, 5, 15; female GD).

The urgency to secure access to tourism benefits was heightened by a protracted subdivision process (which lasted over ten years). The dissolution of the Trust (which was the institution responsible for distributing tourism benefits under the ranch structure) exacerbated this urgency (arrow 2). In the absence of the Trust, locally created institutions[24] called wildlife associations emerged to distribute tourism benefits among members (arrow 3; KIIs 1, 2, 15, male GD). Association membership was chaotic and benefit-flows fluctuated. Netmap respondents identified the creation of a grand total of 12 new associations within the project

[23] Respondents recalled cases of self-selection (male GD; HHs 6, 9, 11, 17) where a minority elite manipulated the subdivision process to secure large tracts of land located in fertile areas or hosting tourist lodges often through bribery (KIIs 1, 2, 4).

[24] This was a very unstable and fluctuant process of collective action. The associations replaced the benefit-distribution role of the Trust as land was no longer owned under the 'group' status, but transitioning to individual status; the Trust therefore was disbanded as a redundant institution.

area. Landowners joined associations on the basis of receiving direct tourism revenues. However, in many instances, membership was also based on political affiliation, as some associations were established by former ranch officials who utilized their positions to leverage member support (HHs 3, 9, 13).

After privatization of the Koiyaki-Lemek Group Ranch was completed in mid-1990, to consolidate benefit distribution, the conservancy was established on individually owned land in 2009. Study respondents therefore emphasized the current revenue-sharing arrangement was by far more equitable than prior arrangements (arrows 4 - 6). Payments were no longer infrequent and relatively equal amounts were received by the majority. Taken as a whole, this historical analysis offers a valuable contribution that begins to explain the current equity outcomes observed. Firstly, dissatisfaction with the poor distribution of, and inconsistent access to tourism revenues triggered processes to secure more distributive equity. Secondly, although institutional mechanisms for decision-making were designed, interfering with long-standing power imbalances and gender norms curtailed procedural equity outcomes.

Kasigau Phase 1: Taita group ranches (early 1970s)

Explaining why the distribution of land and benefits was so different in Kasigau required following the string of events leading up from group ranch establishment in Taita. While subject to the same land reform act as the Mara, formal entitlements to ranches in Taita varied considerably. Ranch ownership was characterized by multiple categories, through government leases granted to individuals, shareholding partnerships and private companies in the 1960s and 1970s. A few ranches in the form of Directed Agricultural Companies (DACs) were reserved for the community where membership entailed the purchase of shares amounting to today's exchange rate equivalent of $0.20, or in exchange for one head of cattle (KIIs 6, 7, 8). The majority of community members did not however purchase shares in the ranches (GDs; KIIs 7, 8).[25] Incentives to join ranches were low as access to land for livestock grazing, firewood collection and charcoal burning remained largely uncontrolled. Respondents also explained low membership as a result of perceptions that customary land claims were sufficient; therefore legal claims through ranch registration were inconsequential.

[25] See Chomba et al. (2016).

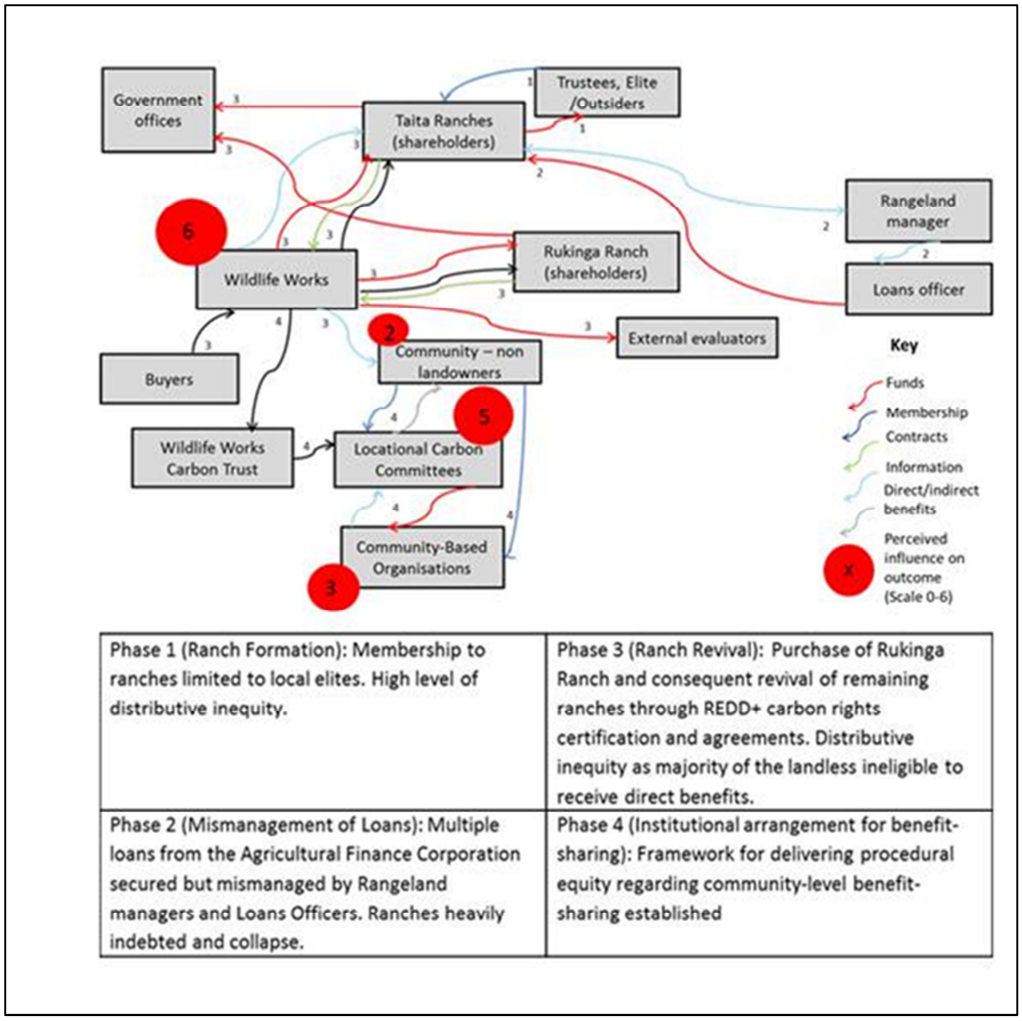


Figure 11: Netmap results for the processes leading up to Kasigau establishment

Phase 1 (arrow 1 in Figure 11) illustrates that the resulting leniency in formal land claims provided an opportunity for trustees[26] to take advantage by bestowing themselves, village elders and other associates leases, either as individuals, partners or shareholders in private companies (KII 6, 7, 8). Ranch formation therefore served to distinguish the majority of community members from the same elite that were entrusted to safeguard local Taita land. Attributing the differing tenure arrangements to the associated incentive structures in Kasigau provides an initial explanation for the divergent equity outcomes between the two sites.

Kasigau Phases 2 - 4: Collapse of Taita group ranches (1990 - 2000)

The ranches failed to generate sufficient incomes (arrow 2; KIIs 6, 7) which were relying heavily on loans from the Agricultural Finance Corporation for livestock purchase and

[26] Ranch ownership was secured by trustees (mainly local politicians and senior district and county council officials) on behalf of the local community who signed lease agreements

infrastructure development (GDs; KIIs 7, 9). With limited experience in commercial livestock ranching, elderly group ranch directors entrusted government-funded range management officers who worked closely with the finance officer. According to various respondents, these two players exploited the knowledge asymmetry by frequently securing and mismanaging loans, thereby facilitating the process of group ranch collapse (male GDs; KII 6). The ranches were further affected by severe droughts (1972 – 1974, 1984) that decimated livestock populations. By the early 1990s, most ranches were vacant and redundant, or were leased out for grazing. Communities from nearby settlement areas moved in and began practicing slash and burn agriculture as well as the extensive destruction of wooded areas, making Taita synonymous countrywide with charcoal production (KIIs 6, 7; HHs 19, 26, 29).

It was within this unfavorable context that in 1998, 80% of shares of the privately owned, but insolvent Rukinga Ranch (30,000ha) were purchased by the founder of Wildlife Works (Phase 3).[27] As REDD+ presented an attractive opportunity to generate environmentally-friendly revenues for the economically inactive ranch, in 2009, the Kasigau Phase I Project Design Document was completed. This entailed a series of agreements and validation processes (arrow 3). The Voluntary Carbon Standards certified the project using a rigorous carbon accounting methodology and the Climate, Community and Biodiversity Alliance (CCBA) influenced the design of local level decision-making arrangements. Collectively these steps demonstrate the company's commitment to both social and environmental aspects earning the project GOLD level certification under the CCBA. The project implementers actively engaged with ranch owners and community members to economically revive the neighboring (13) ranches depicted by arrows labelled 3 (KII 7).[28] To establish the three-way benefit sharing arrangement, a series of consultations resulted in signed carbon rights agreements with the ranches. Informal agreements through Free Prior and Informed Consent (FPIC) with community members were also arrived at under CCBA for the second phase of the project (depicted by arrows 4). Without formal landownership community members were therefore excluded from receiving direct carbon monies. Innovative procedural mechanisms were however designed to integrate community-level participation (arrow 4). Identified as the main drivers of deforestation, without community buy-in, avoiding emissions was considered a considerable challenge. Understanding the origins of Kasigau's high distributional inequity

[27] One share was on offer for the equivalent of under USD 5 per acre (KI 7).
[28] Economic revival was enabled by money from the sale of 1 million tonnes of carbon at approximately $4.5 per tonne.

- overlaid upon minimal alternative and environmentally destructive income sources - offers rich insight for emphasis observed on procedural equity mechanisms.

2.5 Discussion

The results indicate historical processes play an important role in conditioning specific equity outcomes. The distribution of land - in terms of value and amount – and relations of power between actors are among the identified factors that affected equity differences. We present a discussion below.

2.5.1 Varying Perceptions of Land Value

The The process-oriented analysis reveals a clear relationship between local perceptions of land value and observed equity outcomes. In both sites, land reform initiated the fragmentation of the communal land tenure system. Initial signs of inequity regarding land distribution were by far more evident in Kasigau than in the Mara. Respondents explained that distributive inequity resulted from weak incentive systems and the prioritization of customary over formal claims to land. Notions of efficiency support these findings and offer explanatory power for the observed differences. Efficiency refers to the response of rational actors to available economic opportunities. It is these opportunities that drive shifting tenure regimes (Mwangi 2007b). Therefore, ranch membership was more likely to be pursued and privatization supported by individuals who considered that gains through alternative income sources would outweigh costs incurred under new tenure structures.[29] In Kasigau only a minority anticipated the potential benefits of ranch membership which fostered an enabling environment for the consequent elite capture (Chomba et al. 2016).

It is not unique for processes of land subdivision to facilitate elite capture, having occurred during Kenya's colonial era when educated elites were allocated larger land units (Mwangi et al. 2006). Information asymmetry thus enabled local elites at the time to have a better understanding of "the colonizers' language and law" (ibid). It is also not unique for elite capture to occur within PES schemes, as has been illustrated in various other cases (McAfee & Shapiro 2010; Mahanty et al. 2013). However, understanding how the value of available economic opportunities shapes land distribution helps explain why equity outcomes were significantly more balanced in the Mara in comparison to Kasigau. Many argue that

[29] Additional factors in support of the subdivision process that were distinctively different from Taita have been identified by Mwangi (2007) regarding the ranches in neighbouring Kajiado District. These included access to capital markets through title, increased sense of uncertainty due to population increases and heightened by outsiders/those without legitimate claims who were allocated parcels, agriculture under irrigation, as well as political pressure from the government to privatise (Simiren 2007).

participation in, and benefits from PES can be improved if unequal power dynamics are taken into consideration, reducing the potential likelihood of elite capture (Shapiro-Garza 2013; Adhikari & Boag 2012; Hirsch et al. 2011; Chomba et al. 2016). While there has been progress in the direction of designing safeguards against exacerbating power imbalances and harming indigenous local communities (McDermott et al. 2012; Den Besten et al. 2014), rights-based advocates insist that equitable processes and outcomes should be a prerequisite for market-based approaches rather than an unenforceable guideline (Agrawal et al. 2011; Visseren-Hamakers et al. 2012; Phelps et al. 2010).

2.5.2 Power through Land Ownership: Benefits and limitations

Land ownership is central in determining distributive equity in PES (Vatn 2010; Wunder 2013; Brown & Corbera 2003) and strengthens the power of landowners in bargaining processes. Bargaining involves processes of give and take, cooperation and conflict, win and lose among actors with relatively variable resources and powers (Agarwal 1997). Our results emphasize that where resource users have high bargaining power, including secure land tenure and knowledge of ecosystem service markets, communities' negotiation processes with intermediaries led to favorable distributional outcomes. In the Mara, negotiations with intermediaries demonstrated a strong knowledge of the economic potential of the area.[30] It follows that the Board of Governors were identified as having more influence over distribution outcomes than the implementing agency – results which reflect perceptions of the landowners' leverage over acceptable outcomes. On the contrary, the lack of formal tenure all but restricted bargaining powers of community members in Kasigau. Our findings therefore illustrate a case where actors with less 'resources' face higher costs in the event of a negotiation breakdown therefore are unlikely to challenge the stronger party's proposal (Knight, 1992 as cited in Mwangi et al. 2006). This might explain why community members were willing to participate in the project despite minimal benefits. High inequalities between bargaining parties therefore reinforce the marginal influence of weaker parties over equitable outcomes.

Secure land tenure is however not a prerequisite for achieving procedural equity. Despite evenly distributed land in the Mara, procedural mechanisms were compromised due to groups of prominent individuals within decision-making structures. Weak procedural systems relate

[30] This knowledge was also influenced by evidence from neighbouring conservancies where land easement agreements were arrived at successfully based on the profits that could be generated from alternative land uses (opportunity costs of not putting land under conservation).

to concepts of legitimacy and the implications of illegitimate systems are relevant for the current study. Legitimacy refers not only to distributional outcomes, but to the implementation of rules conceived of as fair and arrived at inclusively (He & Sikor 2015). PES mechanisms must therefore be justified according to principles of social norms and characterized by consent regarding claims to authority over natural resources and their benefits (Jentoft 2000). Failure to involve resource users in PES scheme design can undermine the sustainability of PES objectives potentially leading to increased conflict (Luttrell et al. 2013). In extreme cases, non-inclusive procedures can even halt implementation (Pascual et al. 2010). Had the benefit-sharing rationale in Kasigau been legal ownership alone, this would be an inadequate strategy to address the underlying drivers of deforestation and may risk further marginalizing landless resource-users. It is argued therefore that approaches in favor of procedural equity maintain that legal authority alone does not determine legitimacy, unless reflective of the wider moral or ethical rights of a given context (Jentoft 2000; Luttrell et al. 2013).

The gendered outcomes assessed in the study represent varying perceptions of the wider moral and ethical rights in the study sites. Attention to why women were disadvantaged regarding procedural (Mara) and distributive (Kasigau) dimensions of equity is therefore warranted. One the one hand, the observed gender imbalances regarding land ownership are not restricted to the Mara but instead echo Kenya's colonial land tenure policies (for example the Swynnerton Plan of 1954). Under these policies, gender relations of power were skewed by advocating for a single registered owner of land assumed as the male household head, inadvertently mirroring patriarchal gender relations in England at the time (Verma 2014). As non-landowners, the extent that women from the Mara benefitted from PES depended on intra-household distributional dynamics (for direct cash) which were not directly investigated in this study. Nonetheless, the subdivision process which was tied to group ranch and later scheme membership served to reinforce gendered inequities (Mwangi 2007b).

On the other hand, exploring gendered equity in PES may call for a fourth analytical category, that of 'franchise' equity. Franchise equity relates to an assessment of whether 'everybody wants pie' (Farrell, 2014) and may offer a useful approach to examining intra household decision-making processes and community-level gendered participation. The underlying principle of franchise equity in PES is that local resource users "should not be expected to incur unremunerated costs in the course of maintaining a marketable ecosystem service" (Van Hecken & Bastiaensen 2010; Farrell 2014). The main reason being that rules

and regulations may impose gendered power relations that may weaken overall equity outcomes in PES. Adopting concepts that exhaustively capture the multidimensionality of equity is encouraged given the fact that "both men and women are as much a part of the conservation landscape as are the resources under conservation" (Kariuki & Birner 2016). Ultimately, the real challenge for PES is how to enable significant and sustainable equity outcomes, without inflicting harm (Da Motta et al. 1999; Hendrickson & Corbera 2015; Wunder 2013). Do no harm poses considerable difficulties, especially if provisions to accommodate and reconcile between both formal and informal institutions are lacking (Pahl-Wostl 2009: 357). Given the context in the Mara characterized by rigid socio-cultural gender norms, the likelihood of triggering negative outcomes would be minimized if strategies incorporating gendered power imbalances were actively employed.

2.6 Conclusion

This study adopts a process-oriented approach to compare the institutional contexts within which two PES schemes in Kenya emerged. We found considerable variability in the equity outcomes between the Mara and Kasigau, despite originating from the same land reform act. While land and PES benefits were more evenly distributed in the Mara, great disparities were observed in Kasigau. The cases also illustrate the challenges associated with achieving multiple dimensions of equity simultaneously. In none of the sites were both distributional and procedural equity adequately addressed because the historical motivations for land ownership and the power differentials between actors influenced the scheme design in divergent ways. Distributive outcomes were prioritized and achieved in the Mara, but were unfeasible in Kasigau where procedural equity was prioritized. Based on the Kasigau case, we learned therefore, that distributive equity is not a prerequisite for facilitating procedural equity. Furthermore, it was only in Kasigau where provisions to meaningfully integrate men and women in decision-making existed.

The underlying reasons for the different equity outcomes are attributed largely to variation in the details of how institutions emerged, were sustained and operated. The shifting land tenure arrangements coupled with differing perceptions of land value were identified as important for the distribution of land at the time of PES implementation. Whereas, the cultural norms that structure the 'rules of the game' were identified as contributing to the gendered inequities observed in the Mara. Results highlight the need to better understand the expense - in terms of equity for all stakeholders -at which conservation outcomes are occurring. Even in the context of evenly distributed benefits, aspects of exclusion can affect legitimacy and risk the

overall sustainability of PES programs. This said, integrating institutional mechanisms to better deliver conservation through communities of resource users is highly complex.

It is clear from these results that PES schemes even within the same country do not emerge uniformly, but attention to local level dimensions helps explain existing equity outcomes. Ultimately, for future development of PES schemes in Kenya, we urge for a deeper examination of historical factors and we encourage the integration of novel concepts with which to explore equity more exhaustively (such as franchise equity). The extent to which institutional interplay is acknowledged and integrated to promote more equitable outcomes within the schemes is also encouraged to allow for the integration of customary institutions. Explanations for analyzing the local-level institutional complexities therefore call for transcending the conventional models of efficiency (relative price changes) to accommodate the influence of power imbalances due to historical processes.

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3 ARE MARKET-BASED CONSERVATION SCHEMES GENDER-BLIND? A QUALITATIVE STUDY OF THREE CASES FROM KENYA.

Juliet Kariuki and Regina Birner

Kariuki, J. and Birner, R. 2016. Are Market-Based Conservation Schemes Gender-Blind? A Qualitative Study of Three Cases from Kenya. *Society and Natural Resources*. 29: 432-447.

Abstract

Payments for Ecosystem Services (PES) and Reduced Emissions from Deforestation and Forest Degradation (REDD) are considered effective market-based conservation approaches. Surprisingly, limited evidence is conceptualised from a gendered perspective despite widespread knowledge of men's and women's roles as resource users. The study unravels this puzzle by exploring the extent to which three schemes in Kenya integrate gender in design and implementation. We adopt a combination of in-depth intra household interviews, gender disaggregated focus group discussions and key informant interviews to collect data from scheme members. With the exception of REDD, results reveal widespread gender exclusion despite gender differentiated costs and benefits incurred by community members living around conservation areas. Gender blindness is considered to reflect economic rationale, property rights and perception biases. We recommend a broader conceptualisation of property rights beyond that of ownership to incorporate use rights and labour costs often incurred differently, but considerably by men and women.

Keywords: gender; payment for Ecosystem services; reduced emissions from deforestation and forest degradation; Kenya

The first step is to measure whatever can be easily measured. This is ok as far as it goes. The second step is to disregard that which can't be measured. . . . This is artificial and misleading. The third step is to presume that what can't be measured easily is not very important. This is blindness...

Mcnamara Fallecy (Wiliam, 2000)

3.1 Introduction

Men and women are increasingly recognised as resource managers in crop and livestock-based systems, especially within the context of climate change. Conservation approaches that alter resource management practices therefore alter how men and women conduct agricultural activities and also influence the achievement of important household welfare needs (Russell and Vabi 2013). Despite this recognition, the inclusion of gender concerns in conservation remains a major challenge. As conservation transitions towards more systems-based approaches, acknowledging the roles of men and women as an important part of these same conservation landscapes has never been more critical.

Much headway has been made through international conferences (United Nations Conference on Environment and Development, 1992; World Summit on Sustainable Development, 2002) and conventions (Convention on Biological Diversity, 1993; Convention on Climate Change, 1992) that offer guidance on how to address gender disparities in resource access and use, incorporate gendered knowledge of biodiversity into programs as well as increase gendered participation in resource-related decision-making. However, translating these agreements into practice continues to fall short of expectations. In Kenya, a spectrum of conservation approaches is testament to the transition from top-down, to bottom-up strategies. However, mechanisms that integrate gendered dimensions in resource- use in order to maximise benefits for communities living in or around conservation areas remain few and far between. According to the Environment and Gender Index, Kenya is among the weakest performers ranking 50th out of 72 reviewed countries on various categories of gender integration in environmental projects (IUCN 2013).

Payments for Ecosystem Services (PES) and Reduced Emissions from Deforestation and Forest Degradation plus forest conservation, sustainable management of forests and enhancement of carbon stocks (REDD+) are among the recent tools applied to conserve scarce resources in Kenya. Food, clean water and air and recreational facilities are the benefits obtained from ecosystems. Market-based tools such as PES and REDD+ assign a monetary value to the restoration and conservation of the natural resources and processes that provide these services. PES and REDD+ therefore differ from conventional conservation approaches because they; i) compensate or reward resource managers through financial and other means to promote conservation and restoration of vital natural resources, and; ii) offer payments on condition that practices that ensure the provision of services are adopted (Ferraro & Kiss 2002).

Market-based approaches are considered an efficient and effective means to overcome conservation challenges (McAfee 1999b) as conditional financial transfers are expected to reduce over-reliance on scarce resources. Market-based approaches are also considered important tools within the context of climate variability and change. Potentially, REDD+ can mitigate the effects of climate change by creating incentives for reforestation (Angelsen et al. 2009), while direct transfers from PES can reduce vulnerability to climate change by providing a steady income stream from non-agricultural sources during droughts (Osano, Said, Leeuw, et al. 2013).

A literature review of 200 references of PES schemes noted that less than five percent dealt with gender-related aspects of PES (Ravnborg et al. 2007). This knowledge gap is particularly alarming given documented examples of how women, like men form an integral component of the resource-rich and resource-threatened rural landscapes in which many PES schemes are implemented (Schneider 2013). Adopting a gendered lens is particularly relevant within the context of the gender asset gap (Meinzen-Dick et al. 2011) regarding men's and women's abilities to adapt to the rules and regulations stipulated under market-based schemes. Market-based approaches may potentially widen the gender asset gap, therefore undermining men's and / or women's ability to manage shocks and stresses - of which women are often reported to be more vulnerable to than men (Okali et al. 2013).

Gender-specific design measures are nonetheless not entirely absent from schemes. Although limited, research shows that gender inclusion in PES and REDD+ can generate more widespread benefits for poor households. For example, direct targeting to reduce barriers to participation has; i) helped integrate gendered needs under PES schemes (Shames, Wollenberg, et al. 2012); ii) improved benefit distribution (Turpie et al. 2008) and; iii) created new platforms from which women can engage in PES-related activities (FAO 2011).

Within the Kenyan context, there is little understanding of the extent to which market-based schemes meet the needs of both men and women. At a time when there is extensive emphasis on the importance of gender in agriculture and climate change, it remains puzzling as to why there is so little attention to gender in related sectors of wildlife and to a lesser degree, forestry conservation. This paper begins to answer this question by establishing the extent of, and reasons for gender bias in market-based conservation schemes. We adopt an innovative qualitative approach consisting of gender-disaggregated data collection tools, which we apply to three schemes from Kenya. Based on the observations, we then draw from various strands

from the literature in an effort to solve the gender-bias puzzle. The remainder of this paper is organised as follows: the next section describes the study methodology followed by a presentation of the results. Section 4 discusses the findings and the final section presents the conclusion.

3.2 Methodology

This section provides a review of the study sites, the approaches employed for data collection and analyses.

3.2.1 Case Studies

Three case studies were selected in Kenya. The cases are market-based in different ways and were selected according to a number of variables considered relevant for revealing interesting implications on gender issues in resource management. The sites differed according to conservation focus, rules and regulations, and benefit distribution mechanisms. This study was conducted with respondents from Kitengela Wildlife Lease Program (Kitengela), Mara North Conservancy (Mara), and Kasigau Corridor REDD+ Project (Kasigau) covering three counties – Kajiado, Narok and Taita Taveta (Figure 12).

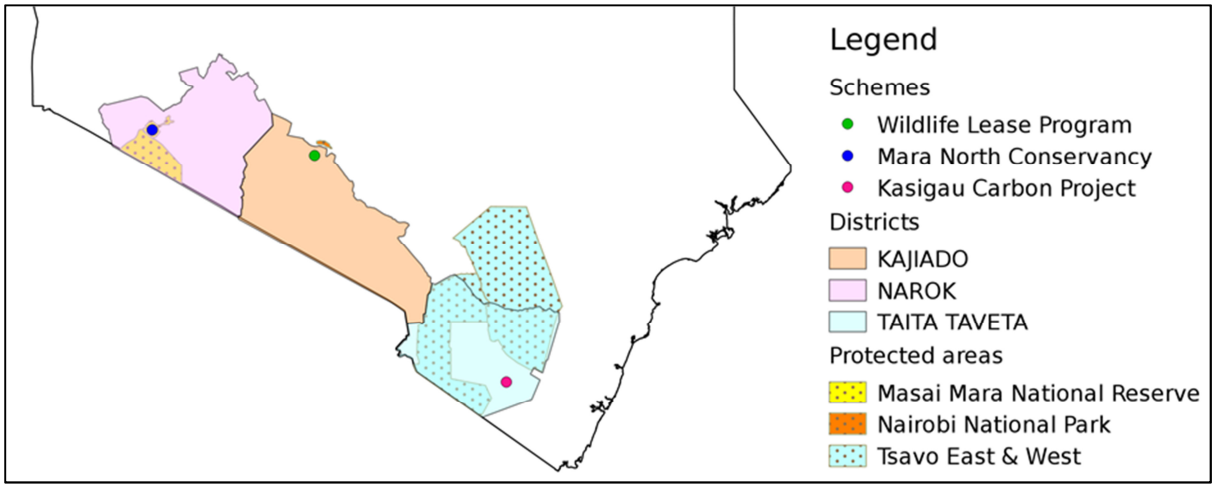

Figure 12: Map of study sites

Source: Carlos Quiros

The wildlife schemes differ in that Kitengela is donor-funded and Mara is funded through tourism bed fees. Both however are implemented in agro-pastoral systems inhabited by the Maasai community. While the two schemes offer direct payments to land-owners, the payment modes differ; Kitengela paid quarterly and Mara monthly. Payments in Kitengela were delivered at public ceremonies where cheques would be disbursed, whereas in the Mara, private

bank transfers are the main mechanism. Rules for receiving payments for both schemes included refraining from land sales, however in the Mara, settlements and grazing within designated areas is disallowed while in Kitengela restrictions were on fencing, quarrying and cultivation.

By contrast, the Kasigau project is funded through carbon sales validated and verified under the Verified Carbon Standards and the Climate Community and Biodiversity Standards (Korchinsky et al. 2011). Unlike the wildlife schemes, the carbon project is implemented in a mixed-crop-livestock system where smallholder crop and livestock agriculture and large scale ranching are the main land uses. Direct payments from the sale of carbon are made only to private ranches, whereas payments to Locational Carbon Committees are used to fund local community projects coordinated through the implementing agency's Carbon Trust (Table 7).

Table 6: Site characteristics

Characteristics	**Kitengela**	**Mara**	**Kasigau**
Type of ES	Biodiversity	Biodiversity	Carbon
Status	2002 – 2012	2009 – present	2005 - 2035
Payment source	Donor	Private (tourism)	Private (international carbon market)
Tenure	Private	Private	Private (transition)
Land amount (acres)	> 61,000	74,000	500,000
Main livelihood	Agropastoral	Agropastoral	Mixed crop/livestock farming
Land-use regulations	Sale, subdivision, fencing	Sale, settlements, grazing, deforestation	Deforestation, settlement (wildlife poaching)
Benefit distribution	Direct	Direct	Direct (ranches)
	USD 4 per acre quarterly	USD 1.3 per acre monthly	Indirect (community receives bursaries; education, water and health infrastructure)

3.2.2 Data Collection and Analysis

Data collection and analysis was informed by principles of the Grounded Theory approach (Glaser & Strauss 2009); namely, the employment of comparative methods and the principle of saturation. To capture gender differences, the study used comparative methods (Table 8) of in-depth intra-household interviews, gender disaggregated focus group discussions (FGDs) and key informant interviews (KII). Where possible, households were randomly selected drawn from scheme membership lists, otherwise respondents were selected using a purposive diversity sample (Weiss 1995). FGD respondents were purposively sampled to capture a representative selection of participants. The principle of saturation applied when a satisfactory number of respondents offered the same information regarding issues of relevance for the study. A total of 35 intra-household interviews, eight gender disaggregated FGDs, and 12 KIIs were conducted. Information collected was transcribed and analysed inductively using content analysis (Glaser & Strauss 2009) complemented through the use of qualitative data analysis software (NVivo).

Table 7: Summary of data collection and key research questions

Method and key research questions		Kitengela	Mara	Kasigau	TOTAL
In-depth Intra Household Interviews (with scheme members)	♂	4	9	8	**19**
	♀	4	9	7	**16**
Describe how you and spouse meet household priorities, who makes key decisions and why? Explain how, if at all, joining the scheme has influenced decision-making and household welfare outcomes. What happens from when the payout is made, to when it is spent; how is expenditure decided upon? Explain the main ways in which the scheme has affected your daily activities.					
Focus Group Discussion (with scheme members)	♂	2	2	1	**4**
	♀	2	2	1	**4**
What do you know about the PES/REDD+ scheme? Have you been involved in the design and implementation? Which sorts of activities do you engage in on a daily basis according to season? How have resource management activities changed since the onset of the scheme? What are the main benefits and disadvantages of the scheme? What opportunities do you see in the future from the scheme? Which aspects (both positive and negative) of the scheme have the greatest impact on your community and on whom?					
Key Informant Interviews (with key stakeholders)		4	4	4	**12**
How was the scheme established and who was involved? In what ways, if any, did project design incorporate views of men and women resource users?					

3.3 Results

The results are categorised into two sections: first we provide evidence of gender integration in the schemes according to emerging themes from the content analysis, followed by a description of gendered perceptions on the distribution of costs and benefits across the schemes.

3.3.1 Status of Gender Integration

The analysis revealed various aspects of gender inclusion and captured the following themes; enrolment, participation in decision-making, and implementation of initiatives that target gender outcomes as part of project design (Table 9).

Table 8: Summary of gender integration in PES and REDD+

Gender integration theme	Kitengela	Mara	Kasigau
Total number of members	417	809	100,000
% enrolment by women	2%	1%	N/A
Gender-balanced participation in decision-making (committee membership)	No	No	Yes
Presence of targeted gender initiatives	Yes	No	Yes

Enrolment

Between one and two percent of members in the Mara and Kitengela were female. Female membership was restricted to widows, and in the Mara, it was common that sons would either represent their mothers at meetings and/or receive payments on their behalf. Female spouses, especially from the Mara were often reluctant to even comment on land ownership matters implying they would be speaking out of tone:

"I don't know about the land register because this is the man's role"

(Female spouse – Mara)

Perceptions of female land-ownership were hotly debated in the FGDs within the context of changing land inheritance policies (enabling daughters an equal inheritance as sons) and to curb

indiscriminate land disposal by sons, especially in Kitengela. Here, land transfer to daughters was occurring on a small scale. While in Kasigau, contracts were only signed with ranch owners and not with the approximately 100, 000 community members (from which our sample was derived) who were either ranch shareholders or without land tenure. This explains why it was not possible to determine the percentage of female enrolment in the REDD+ scheme. However, the process of issuing individual land titles in Kasigau was underway and opportunities for joint titling were discussed. Most male interviewees claimed they were unaware of the joint-title option but expressed no opposition as both husband and wife were perceived as utilising the land equally.

Participation in decision-making

There was little difference in responses on scheme participation across all sites. Consensus was that women were significantly less active than men in decision-making in the various resource-use committees. Limited participation was attributed to low female enrolment and cultural norms that restricted women's inclusion. More balanced gendered participation was however observed under a number of conditions. In Kasigau, the obligation to meet international verification standards required that Free Prior and Informed Consent was sought from community members with regard to benefit distribution mechanisms (KII; Korchinsky et al. 2011); and, affirmative action was implemented for the carbon committees requiring 30% female representation (KII). While affirmative action is criticised for failing to provide a 'genuine' space for women to participate in the presence of men, women's involvement was described as effective and integral to the expansion of community infrastructure projects (KII).

In Kitengela, contract-holders arrived at the decision to hold public disbursement ceremonies which promoted transparency and created a useful forum for men and women to express viewpoints regarding distribution mechanisms. While gendered concerns were not explicitly integrated into project design documents in Kitengela (KII) we observed informal conflict management mechanisms that enabled women's concerns about payment misuse to be addressed.

"…another woman … has no husband and so her son joined [the scheme] on her behalf, and they receive forty thousand shillings which they have to divide. But this young man usually picks the money and finishes it… so the mother complain[ed] all the time and I had to make a solution that no son will ever receive the money when the mother is [alive] even if her husband is dead… after that her son came to me complaining that his mother is old and so she has no

young children to take care of her… tell her to give me the money, he said. But I told him to go to his mother and request peacefully to give [him] some money for use".

(KII)

Gender concerns in the Mara were not integrated in scheme design (KII)[31] and women were rarely consulted on program implementation, nor were they represented in any of the decision-making committees for land, livestock grazing and breeding.

Existence of activities explicitly related to gender

None of the schemes implemented an explicit gender project. Findings do show however, that salaried employment opportunities embedded within schemes or delivered through partnerships with collaborating agencies did employ different gender targeted approaches. This was particularly the case in Kasigau where the implementing agency hires and trains mainly men from the community as rangers, and women as workers in their clothes factory. Other employment opportunities for men and women were offered through tree nurseries and an eco – charcoal project. Male focus group discussants often complained that there was a need for more job creation, lack thereof would not address the problem of deforestation for charcoal production.

By comparison, the private company managing the Mara scheme operates both a controlled grazing programme and a livestock breeding program for which women and a considerable share of men were not consulted on the development of either (KII; FGD). However, by proxy of their roles as livestock managers, water and fuelwood collectors, most female respondents were aware of the grazing rules; few men and much fewer women were aware of the livestock breeding program, even though adopting improved breeds may have negative implications on household-level nutrition and livestock asset wealth. Women's exclusion was debated in FGDs as a product of the strict gender stereotypes characteristic of traditional Maasai culture.

All schemes except Kasigau offer a compensation program for wildlife-related livestock losses. Livestock compensated include cattle, goats and sheep; while in Kitengela, donkeys are also compensated. Compensation for crop loss was however excluded; even though small-scale subsistence and commercial agriculture was common across our sample.

[31] Documentation from the Mara project also reflected the exclusion of women focusing namely on 'land owners', of which our results show us that over 90% were male.

3.3.2 Gendered Distribution of Benefits and Costs

The next section describes gendered perceptions of the distribution of costs and benefits highlighting the conditions under which gender-integration in PES and REDD+ may be worthy of consideration.

3.3.2.1 Gendered Distribution of Benefits

When explaining their experiences, male and female respondents offered different perceptions of direct (financial) and indirect (infrastructure) benefits.

Financial benefits

Overall, there was agreement from men and women regarding the main benefits derived from direct payments. Cash was used to pay school fees, and purchase livestock inputs and food. The synchrony of cheque disbursements with school opening dates was an added benefit in Kitengela. Here women discussants deliberated over the risks of disbursement at other points in the year when the need for large sums of cash is lower. These included perceptions that some men would 'drink' the money. A major advantage expressed by men from Kitengela was the reduced need to dispose of livestock assets to pay school fees, especially at the peak of the dry season where livestock fetches low prices. This, according to female respondents helped retain children in school during dry spells. Prior to the program it was frequent for children to drop out of school during dry seasons owing to parents' inability to afford fees. In the Mara, monthly payments were considered a stable income supplement and both men and women acknowledged that most households could afford fees, even those with several school-going children.

At the intra-household level, respondents held divergent views regarding the uses of 'the rest of the money'. Nearly all men from Kitengela claimed that not much remained for other uses, while nearly half of the men from the Mara indicated the remainder was used to hire labour throughout the year. When this question was directed to women, it was especially difficult for respondents from the Mara to account for use as they often did not know 'how much' money remained. Additionally, responses showed that not all households in the Mara could afford hired labour, and in some cases women's viewpoints were opposite from those of their husbands'. Information asymmetry was characteristic of approximately half of the women respondents for whom cash transfers from husbands fluctuated on a regular basis. These fluctuations made it difficult for women to account for the specific role of PES in managing climate variability.

While all men preferred an increase in the payment amount, different preferences regarding benefit distribution mechanisms from women were observed. Women, especially from Kitengela requested to be direct cash beneficiaries through suggestions such as alternating payments between husband and wife[32]; transferring a share of payments directly to wives and; joint names on contracts enabling women's eligibility for payment. Despite these suggestions, it was almost unanimously acknowledged, by both men and women that predominant patriarchal systems would constrain women's participation as PES beneficiaries. Furthermore, female respondents claimed that 'openly' receiving payments with their husbands' knowledge may likely incite intra-household conflicts.

What if we … come up with a way that [the men] will not know that their money has been interfered with, we can just decide that every woman should also receive a share… but how do you expect these men not to know that you are receiving their money and they will be given less? The only solution is if [the project] compensates women without reducing the money they are giving to the men. Because when they reduce that money the men will know …

FGD female respondent (Kitengela)

Improvements to household welfare were also among the benefits that were reported differently according to gender. Men referred more to the benefits of diversified income portfolios (Mara) and reduced impacts of droughts (Kitengela). Women, in contrast, referred more to improved nutritional diversity and food availability during dry periods. In the Mara, more frequently consumed animal source foods and vegetables were reported with the observation that household members never went 'hungry' compared to perceptions about other non-member households. For a minority of women, knowledge of PES payment amounts enabled them to exercise some leverage over use, especially in Kitengela where payments were distributed publicly.

Social services

In Kasigau, carbon payments were utilised to fund bursaries, and health, water and education infrastructure. Although few from our sample benefitted directly, bursaries were highlighted as an important opportunity from the scheme. Benefits regarding water projects were identified by all Kasigau respondents however were marginally more likely to be cited by women compared to men. This small difference in gendered responses can be attributed to the fact that in

[32] Whereby, payments go to the husband one month, and to his wife the following month.

Kasigau, both men and women engage in water collection activities, which is not often the case in the pastoralist sites. A quarter of women from the intra-household interviews described reduced time fetching water and increased access to clean water (not shared with livestock) as key benefits. Often the freed time was allocated to collect fuelwood or spend more time on crop-related activities, which also allowed men to attend to other resource-related or income generating activities. However, nearly half of female respondents complained that water interventions were still located at a distance far away.

3.3.2.2 Gendered Distribution of Costs

Men and women associated various costs to the schemes and often revealed different perspectives regarding the same cost. Women were more likely to incur labour costs compared with men who incurred both financial and labour costs (Table 10).

Livestock predation

Wildlife-related livestock losses were mainly reported in the Mara and Kitengela. Losses were perceived as more severe for men than they were for women particularly because livestock are an important measure of wealth and status among Maasai men. On the contrary, while women are involved in livestock management activities such as milking and herding, only a small proportion reported losses from predation as affecting overall household level food security, unless predation occurred during the dry season.

In spite of the benefits of compensation schemes, men complained that payments were not timely and that compensation values were often not commensurate to the value of the animal lost. Women were by far less likely to know about compensation value and seldom reported poultry losses; however because chickens were perceived as easy to acquire, manage and quick to multiply their loss was not cited as largely problematic. Women were more likely to report on increased labour due to donkey losses, which only occurred occasionally.

Crop-raiding

Discussions around the lack of compensation for crop losses invoked negative responses. Complaints about increased crop-raiding (by elephants in Kasigau, and elands in Kitengela) were reported by both genders as a highly serious concern. Efforts to bridge food deficits incurred gender differentiated labour and financial costs. Results showed that men either diverted money initially allocated to other needs or sought casual labour to pay for food. FGDs with women from Kitengela revealed labour increases related to crop replanting; as well as

financial costs related to the use of meagre cash savings to purchase seed. Women from Kitengela also reported that the increased presence of elands reduced incomes under their control and increased dependence on their husbands.

Additional labour costs identified by respondents in Kasigau and Kitengela included having to "guard" crops throughout the night, often done in shifts by both men and women or by women and/or children in situations where men sought off-farm labour. Crop-based agriculture is an important income source for households; however agricultural production often conflicts with wildlife conservation objectives and may explain why none of the schemes offered crop-related compensation.

Pasture competition

Increased concentrations of grazing wildlife were directly associated with increased pasture exhaustion. While both men and women incurred labour costs, men were more likely to engage in risky activities in search for livestock pasture. Male FGD respondents especially from Kitengela complained that payment was insufficient to meet the costs of fodder purchase and hire a herder. As a result, livestock were grazed in the neighbouring national park, increasing men's chances of arrest by park rangers. Women, especially from Kitengela, complained about increased labour resulting from having to graze livestock further away from, rather than closer to the homestead as competition over pasture had increased. In the absence of a herder and family labour availability (as most children attend school) livestock grazing responsibilities reduced women's time allocation for other activities, but also reiterated their perceptions that the presence of herbivores makes managing dry and drought seasons more laborious.

A discussion point often raised by men was increased cattle mortality due to malignant catarrhal fever[33] transmitted by calving wildebeest attributed to increased concentrations of grazing wildlife. Replacing dead cattle from this disease was the responsibility of men; however loss of milk incomes as a result of mortality was incurred by women. Nonetheless, no compensation could be claimed.

Charcoal production

Charcoal sale was the largest income earner for most Kasigau households, but was not mentioned in either of the other sites. Results indicated that more men than women engaged in

[33] See Bedelian et al. (2007)

this activity. However, REDD+ restrictions on deforestation were perceived by both genders to affect food security due to less (charcoal-related) disposable incomes. Increased labour was also identified by both genders as efforts to seek alternative income opportunities and casual labour was sought – sometimes unsuccessfully. In contrast, intra-household interviews revealed continued deforestation either within the conservation area or in neighbouring ranches, placing men at greater risk than women from getting caught and fined by park rangers.

"... that's what we depend on, if you reduce [charcoaling] what will the children eat"?

(Male household head – Kasigau)

Attitudes towards deforestation were therefore difficult to alter especially in the absence of alternative livelihood options and direct financial benefits in Kasigau.

Table 9: Summary of gendered distribution of costs and benefits

Type of benefit	**Gendered perceptions**		
	Joint	Men	Women
Financial payment	Used for school fees, livestock inputs and food purchase	Diversified income portfolio; reduced impacts of drought (consumption smoothing)	Frequent and strategic timing; improved nutritional diversity and food availability
Social Services	Opportunities through bursaries; improved access to water	Improved access to water	Improved access to 'clean' water
Type of cost			
	Joint	Men	Women
Crop loss (raiding)	Increased labour ('guarding farms'); financial burdens (to bridge food deficits); no compensation	Divert funds towards food purchase; seek off-farm labour (less availability for on-farm activities)	Exhaust savings to purchase seed; reduced income under women's control; disproportionate labour costs of

			guarding crops
Livestock loss (predation)	No common perceptions	Compensation not commensurate to value of lost livestock; delayed payments	Little knowledge; poultry (and donkey) losses not compensated, loss of the latter leading to increased labour
Pasture competition	Increased labour (herding in locations further away)	Engage in risky behaviour (grazing in national park); increased livestock losses due to malignant catarrhal fever due to grazing on shared pastures with wildebeests (uncompensated)	Increased labour burden reducing availability for other activities; income losses due to forgone milk sales from malignant catarrhal fever
Deforestation for charcoal production	Increased food insecurity (decreased food availability); increased labour demands to seek alternative incomes	Engage in risky behaviour (cutting trees for charcoal in restricted areas)	Reduced availability of alternative income opportunities

New forms of conflict and controversy

New opportunities and changing demands on labour arising from PES and REDD+ can bring about new conflicts and new forms of cooperation. The promulgation of Kenya's new constitution and the subsequent election of women representatives to national assembly have triggered hope in women, especially from the Mara. Here, women organised as a group to request (male) committee members for female representation on conservancy matters. Initially met with much resistance through statements such as "do you have land? If you don't you should not speak", the meeting concluded with a commitment to amend the conservancy

constitution to incorporate democratically elected female positions. A group of elderly male focus group discussants further acknowledged the need to change Maasai culture to include women as equal partners in decision-making.

3.4 Discussion

Our observations suggest that despite gender differentiated costs and benefits, gender integration in the reviewed projects is at best systematically (Kasigau), or informally integrated (Kitengela) and at worst non-existent (Mara). However, it is insufficient to highlight that gender exclusion manifests differently under the three conservation contexts. We must also question why gender exclusion is occurring by exploring relevant insights from the literature, which we discuss below.

According to our results, secure land tenure is the only prerequisite for direct benefit distribution. Gender imbalanced membership, especially in the wildlife-based schemes is directly attributed to land as a predominantly male-owned asset and echoes outcomes of gender-biased group ranch membership and subsequent land subdivision in Kenya (Talle 1988). However, if eligibility to enrol in and receive direct benefits from schemes is conceptualised from a property rights perspective, ownership alone offers an inadequate criterion. Property rights explain different degrees of access to and claims over land and other productive resources as being subject to the social relations defining "who can do what with resources" and the benefit streams that they generate (Kirsten et al. 2009: 47). Claims include various combinations of 'control or decision-making' rights (de jure), such as the right to manage, exclude access and dispose of a resource for economic or other gains, as well as 'use' rights (de facto), which enable access, consumption or exploitation of resources for economic benefit (Mwangi & Meinzen-Dick 2009). De jure rights are secured through legal means; therefore, as legal tenure takes precedence over de facto claims, the exclusion of women from direct PES benefits is biased if considered from the broader property rights perspective. When factored into PES and REDD+ design, the imbalanced importance of the different claims may under certain circumstances also negatively influence women's ability to control financial benefits. Neglecting de facto rights thus places the needs of female resource users as subordinate to male household heads.

While insecure land tenure is often referred to as the largest barrier to PES and REDD+ participation (Corbera et al. 2011a), it follows that conceptualising PES and REDD+ from a gender relations perspective also explains the different levels of engagement by schemes in

gender-sensitive programming and activities. Gendered roles and responsibilities place men and women in direct contact with natural resources in differential ways. To a large extent, women from our study sites encounter wildlife while conducting subsistence-related activities, compared with men who are more likely to encounter wildlife whilst herding livestock. Even in Kasigau, where the gendered relations of production are less pronounced, both men and women experience and exploit forest resources, but to different degrees and for different purposes. One interpretation of these experiences is that both men and women are the drivers of deforestation (Kasigau), whereas men are the main victims of wildlife-related losses (Kitengela and Mara) due to their role as livestock herders and household income providers. The gender relations perspective thus supports findings on gender integration in project design by linking i) women and men as exploiters of forest resources, with REDD+ through affirmative action in decision-making, and ii) men and wildlife with PES through enrolment, scheme-related decision-making and livestock compensation. A richer interpretation would however seek to consider the household welfare implications of restrictions on resource-use.

Owing to their lower status as land owners and decision-makers on valuable assets, our results show that women are less visible in PES compared to the REDD+ scheme. However, the factors contributing towards uneven status beyond that of land ownership, warrant further exploration. Cultural norms shaping behaviour often reflect dominant perceptions of gendered rights within a community (Agarwal 1997). Norms determine what can be bargained about and influence bargaining power and bargaining processes (ibid). Despite observing a considerable degree of gender differentiated costs incurred under the reviewed schemes, explaining why contestation was so seldom an occurrence is necessary. Echoing the Mcnamara Fallecy, confronting commonly held views regarding conformity, Sen (1987) argues that the lack of protests against inequality does not reflect the absence of inequality itself. Agarwal (1997) advances Sen's observation by questioning the factors that influence women's conformity to the unequal order. Do women conform because they accept the legitimacy of inequality, are afraid of challenging inequalities, as a survival strategy or because of a belief that no alternative options exist (ibid)? How men and women negotiate and bargain over roles and responsibilities therefore "needs to be seen through a lens of intra-household relations of both cooperation and conflict" (Jackson 1993: 1959). In the widespread case where women tend to be less endowed regarding economic asset ownership, non-cooperation or contestation is prone to unfavourable intra-household outcomes therefore reasonably explaining its infrequent observation.

Our results indicate that the characteristics of the schemes reviewed are an extension of the social norms enforced at the community level. Market-based schemes implemented based on prevailing norms risk widening the so called 'gender-gap' (Meinzen-Dick et al. 2011). For example, in the sites where household income may increase as a result of direct payments, the share of incomes contributed by women may be compromised. Compromised incomes may also undermine women's bargaining position. The gap between men's and women's income is further exacerbated if women also incur financial and labour costs (for example, wildlife-related crop losses).

Despite reflections so far provided on the gendered imbalances within the reviewed schemes, it is important to recognise that practical, methodological and historical constraints also contribute towards the marginal status of gender integration in conservation schemes (Allendorf et al. 2012). Gendered imbalances can persist within contexts where it is difficult to challenge existing gender norms and address prevailing cultural and political institutions (Chen et al. 2009). In response to such challenges, support tools for gender integration are emerging as evidenced by the release of the Women and Carbon Standards (WOCAN 2013a) and the Environment and Gender Index (IUCN 2013). In the short term, support tools promote the implementation of evidence-based approaches such as capacity-building or group-based approaches for mainstreaming gender (men and women) into market-based schemes, which have been shown to enable the achievement of important livelihood-related benefits for both men and women (Shea et al. 2005).

In the least, mainstreaming minimum standards through affirmative action in decision-making (Kasigau) and transparent benefit distribution mechanisms (Kitengela) may provide the conditions necessary to initiate dialogue on the achievement of gender equitable outcomes. However, a minimum standards approach is prone to challenges particularly within contexts characterised by rigid gender norms (Mara). Therefore, addressing the underlying reasons contributing to inequalities - such as unequal land tenure and social norms - requires strategic and long term efforts if transformative change is to occur. For example, achieving asset-based equality through joint land titling in Peru required mobilising and leveraging a diversity of powerful national and international partners to influence and lobby for national level policy reforms (Wiig 2013). Ultimately, land reform is not easy to achieve "and piecemeal project interventions are insufficient in the absence of broader, national programs" that challenge 'business as usual' institutional arrangements in support of new land tenure policies (Larson et al. 2013: 679).

3.5 Conclusion

Our results illustrate that both men and women are as much a part of the conservation landscape as are the resources under conservation. The gendered interactions with water, forests, grasslands and wildlife unfold differently, but significantly under the reviewed schemes. We observed gendered imbalances in scheme enrolment and participation as well as in gender-related integration in project design and implementation. However, gender integration was more emphasised in the REDD+ scheme than in the wildlife schemes. Social factors characteristic of the sites and the efforts of project implementers contributed to this difference. Relatively balanced gender relations in Kasigau, combined with the integration of affirmative action facilitated less skewed participation by women in decision-making regarding carbon-raised incomes. However, informal conflict management and transparent payment mechanisms in Kitengela also contributed towards reducing gender imbalances at the intra-household level. In the absence of deliberate formal and informal mechanisms, persistent inequalities affecting gendered benefit distribution manifested in various forms of contestation.

The literature offers reasons why gender biases are rarely addressed under market-based mechanisms. Conceptualisations from a property rights angle highlights that the narrow focus on legal ownership rights as a prerequisite for PES enrolment, should be challenged in favour of the integration of use rights. Failure to broaden the interpretation of property rights under market-based schemes not only overlooks labour-related costs incurred mainly by women, but also intra-household bargaining dynamics that may undermine household welfare outcomes. If market-based approaches are implemented alongside the pre-existing social norms that determine gender relations, contesting inequality remains a challenge. The 'muteness' that ensues can reflect a perception of no contest.

In order to justify and mainstream the integration of gendered concerns into market-based schemes, short term strategies such as capacity-building and gender mainstreaming can enhance men's and women's participation at the project level. However in contexts where rigid gender norms prevail, more transformative solutions that seek to address the underlying factors of inequality at the national levels are required.

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4 A FRAMEWORK FOR GENDER INTEGRATION IN PES/REDD+ SCHEMES

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Abstract

The past few decades have witnessed a transition from gender blind to gender aware and gender transformative approaches in natural resource management (NRM). However, despite the emergence and application of gender strategies, success with regard to gender equity outcomes has been at best mixed, but often limited. This paper argues that more clarity regarding the conditions under which to employ specific strategies is necessary to bridge the gap between theory and practice. To explore this viewpoint, the often neglected variables of agency and social norms are analysed with respect to key gendered categories including access to, control over and benefits from natural resources. The study adopts an innovative combination of qualitative approaches to compare these variables across communities from four market-based conservation projects in Kenya - specifically Payments for Ecosystem Services (PES) and Reduced Emissions from Deforestation and Forest Degradation (REDD) schemes. The results highlight that gender norms and agency are self-reinforcing and vary according to context. The results emphasise that expectations of men and women at the intra and inter household levels condition interactions with, and benefits from natural resources. Therefore, selecting suitable strategies to promote gender equity in NRM requires an in-depth analysis of the interplay between gendered norms and their influence over women's and men's agency. The paper concludes that there is an urgency to shift away from conventional conceptualisations that simplify the framing and analysis of gender relations, towards approaches that challenge prevailing discourses, such as those that position 'men as problems and women as victims'.

Keywords: gender, payments for ecosystem services; reduced emissions from deforestation and forest degradation; social norms; agency

4.1 Introduction

The past four decades have witnessed an evolution in the natural resource management (NRM) sector towards more gender inclusive interventions. However, this trend has not

occurred free of challenge or across the board as emerging market-based conservation approaches largely overlook the dynamic aspects of gender relations. Many argue therefore that the journey with respect to gender equity in NRM is far from complete (Okali 2011). The gap between gender theory and NRM practice has been sustained by flawed assumptions which have undermined the impact of interventions and in some cases left women worse off than before (Chant & Gutmann 2005). Despite the availability of gender strategies the implication of limited gender equitable outcomes is that much more needs to be understood with respect to the conditions under which strategies should be implemented to promote gender equity. Addressing this knowledge gap is particularly important given the limited attention to gender dimensions in emerging and increasingly popular market-based environmental approaches.

The majority of existing initiatives reflect a trend to empower women financially, reduce poverty and promote equity in order to reduce the over reliance on natural resources. However, these approaches imply a primary focus on the material dimensions of women's empowerment. This primary focus occurs at the expense of the underlying customs and norms that mediate the very same gender – men/women - imbalances the interventions seek to redress (Agarwal 1994; Jackson 1998). Overlooking the influence of norms reflects a controversy that some argue has contributed to marginalising genuine and fundamental gender concerns (Jackson 1993; Jackson 2006; Kevane 2012). Integrating advanced gender thinking into environmental programs therefore continues to be problematic (Nightingale 2011; Levy 1992; Leach 2007; Oliveira & Anderson 1999; Rocheleau et al. 1996; Agarwal 2001).

Attention to gendered norms and women's agency is therefore increasingly encouraged and justified. Given women's interactions with natural resources, growing consensus is that despite their popularity, women-only interventions do not always directly translate into women's control over the benefits. Often this is related to women's limited ability to exercise agency over incomes and other land-related decisions. Consequences such as the reinforcement of gendered power imbalances as well as within-gender elite capture have been shown to undercut the achievement of sustainable local development (Nabane 1996; Schmidt-Soltau & Brockington 2007; Hackel 1999). Where women are totally marginalised from conservation schemes, undesirable effects include; i) increases in their workload to meet household welfare outcomes (Songorwa 1999; Nabane 1996); ii) the unequal control over nature-based incomes which limits their benefits from activities, in spite of their labour

contributions (Nabane 1996) and; iii) their overall exclusion from activities due to high entry costs (Songorwa 1999). Given the relative limitations in gender-neutral and women-only NRM projects, there are increasing efforts to explore more comprehensive strategies to promote gender equitable outcomes in NRM and related sectors of agricultural development. To better integrate gender, the evidence suggests a need to know which approaches exist and the conditions in which they should be applied.

Against this backdrop, this study adopts an innovative participatory approach to compare four unique and successful biodiversity conservation schemes in Kenya. The study begins to address the knowledge gap as it focuses on the gender norms of communities from two wildlife-based schemes and two carbon-based schemes. The aim is to identify and comprehend the gendered norms regarding natural resource access to and control over benefits. Based on knowledge that gender norms vary from context to context, we then present a framework intended to guide the selection and design of suitable gender strategies based on the findings from each of the cases.

Given the limited documentation of gender in market-based conservation schemes, empirical work for this study is drawn from four Payments for Ecosystem Services (PES), two of which are Reduced Emissions from Deforestation and Forest Degradation (REDD+) schemes. PES and REDD+ mediate the 'market' exchange for the supply and demand of ecosystem services - the benefits obtained from ecosystems - such as food, clean water and air and recreational facilities. Market-based approaches assign a monetary value to the natural resources and processes that provide ecosystem services, such as forests, grasslands and water. What distinguishes market-based approaches from conventional approaches such as protected area management and integrated conservation and development projects (ICDPs) is; i) resource managers are rewarded either with cash, or in-kind to promote conservation and restoration of vital natural resources, and; ii) reward is offered on condition that resource users adopt practices that ensure provision of ecosystem services (Wertz-Kanounnikoff & Locatelli 2011; Wunder 2015) .

Focusing on gender dimensions is relevant for this study for various reasons. In Kenya, PES and REDD+ are often implemented on private, rather than state land, which therefore has implications for local-level resource use and intra-household benefit distribution. A recent study found Kenya to be amongst the poorest performers on various categories and indicators of gender integration in environmental projects (IUCN 2013). That market-based approaches

have been so fervently adopted without an equivalent level of enthusiasm towards gender specificities requires exploration (Kariuki & Birner 2016).

We begin with a chronological review of the gender and environmental theories and situate this in relation to implications for gender integration in PES/REDD+. The review illustrates the direction in thinking away from women-only projects and towards thinking on gender norms and women's agency in NRM contexts. The methodology section follows, and illustrates the unique data collection and analysis approaches adopted for the study. We then present our findings and the proposed framework, both of which are discussed thereafter. We close with a conclusion and some recommendations.

4.2 Chronological Review of Gender Approaches: From women to gender

Over the last 40 years, gender and gender strategies have been informed by a series of specific, but flawed assumptions of how to enhance women's participation in, and benefits from development interventions (Leach, 2007). This has led to a transition from gender-blind to gender-aware and most recently, gender transformative strategies (Farnworth & Colverson 2014; Njuki et al. 2013). These trends reveal why it is only in the recent past that critical issues have emerged about men *and* women in the environment, rather than just women. This section reviews the evolution of debates which are then situated within the current practice of market-based conservation approaches.

4.2.1 Gender Neutral Strategies

Until the 1970s, development interventions were assumed to be 'gender neutral' offering equal benefits to men and women (Warren 2007). It wasn't until Boserup's (1970) findings on women's previously unrecognised contributions to economic development and the Ecofeminist movement that the Women in Development (WID) approach was developed. WID emerged in response to evidence on women's limited access to benefits from development projects, including new agricultural technologies and trainings (Wangui 2008). The assumption underlying WID was that reallocating resources to women would directly translate to increasing their productivity and income-earning potential, and therefore an overall improvement in their welfare and status (Nightingale 2006). It was during this era, that 'women-only' strategies were conceptualised and popularised.

Ecofeminism assumed women's universal and maternal connection to nature, which was not only misleading, but heavily criticised. Naturalist assumptions influenced the enthusiastic targeting of women by assigning environmental responsibilities "without addressing whether

[women have] the resources, time, will and capacity to do so" (Wangui 2003). Many projects also overlooked socio-cultural contexts, including the spate of anti-desertification soil, water and rangeland conservation projects implemented during the 'UN Decade for Women' (1976-1985). Studies show that women enrolled in environmental projects out of social obligation, which diverted labour from domestic and agricultural activities that may otherwise have provided an independent source of income (Joekes et al, 1996). In Asia, the closure of forest areas for regeneration occurred without considering women's obligations to meet household welfare (Agarwal, 1997 cited in Locke 1999). Projects in Asia also failed to consult women to seek alternatives in cases where there were customary restrictions to public spaces (Nightingale, 2006). Overall, these programmes failed to distinguish women's needs, or question gender norms and acknowledge women's ability to exercise agency. According to the literature, WID projects inadvertently exploited rigid gender norms to achieve program objectives that were unlikely to be sustainable (Wangui, 2003; Warren, 2007).

4.2.2 Gender Aware Strategies

Consensus that reallocation of development resources to women was an insufficient prerequisite for improving gender equitable outcomes in NRM interventions grew (Locke & Okali 1999). This recognition emphasised that gender relations – the relations between men and women - affect women's productive and reproductive choices and opportunities. Gender-aware strategies embedded within the Gender and Development (GAD) approach soon emerged as more suitable to address inequities in agriculture and NRM (Miller 1995). GAD debunked ecofeminist assumptions and introduced alternative concepts that in principle comprehensively captured the social and ecological complexities influencing gendered resource interactions. Gender aware projects recognise gender inequities in labour allocation and develop actions that adjust to, and limit any harmful impacts (Njuki et al, 2013). In principle, these programmes recognise the needs and realities of both men and women based on the social construction of gendered norms.

Gender aware approaches were promoted by two main theories, namely, Feminist Environmentalism and Feminist Political Ecology. Feminist Environmentalism emphasised that gendered work practices and culturally-specific gender roles determine environmental interactions (Nightingale 2006). These aspects are a product of social processes and endow women with learned and practical knowledge of their ecosystems. According to this logic, it is the gendered division of labour that sustains household survival as both men *and* women perform different but complementary activities (Wangui, 2003; Jackson, 1993). Therefore,

the assumption was that interventions overlooking gender relations are unlikely to be successful in the long term.

Feminist Political Ecology advances the theories of property rights and intra-household power dynamics (Rocheleau et al. 1996). Property rights are the conditions under which women can exercise claims to and control over resources such as land, trees and livestock and the benefits they provide (Kirsten et al. 2009). Being able to exercise claims inherently implies the status of women's agency. Women may be locked into natural resource dependence through imbalanced power relations with men, gathering wild fruits for example because they cannot access income from income-generating trees on private holdings of men (Leach 2007). In this instance, NRM interventions on communal holdings may provide more lasting incentives for women's participation (Joekes & Pointing 1991; Joekes 1996).

Feminist Political Ecology also advances the importance of intra-household power dynamics between husbands and wives as determining labour allocation (Jackson, 1993; Wangui, 2003). For example, in Africa's agriculturally dependent rural areas, labour rights are often characterised by "the rights of men to the labour of women" (Jackson, 1993). Therefore, where decision-making structures are skewed towards men's favour, environmental tasks conducted by women may express the preferences of male household heads, rather than women's enthusiasm (Jackson, 1993). Projects that fail to explore gendered decision-making dynamics and women's ability to exercise agency may unintentionally increase women's workloads, and associated benefits irrespective of their personal choice.

Gender aware approaches emerged in tandem with a variety of frameworks designed to integrate gender concerns at every stage of programme implementation. While a number of well recognised frameworks have been developed, criticisms included, i) lack of contextual focus regarding gendered interactions with natural resources within the wider social and institutional structures (Warren, 2007) and; ii) quick-fix, mechanical approaches that unintentionally served to 'depoliticise' gender inequalities (Cornwall & White 2000). Consequently, the general trend was for gender planning to regress into the status quo of WID-like 'projects for women' leaving unexamined the male gender identities that GAD so fervently advocated (Chant and Gutmann, 2002).

4.2.3 Agency: Bargaining power and intra household dynamics in NRM

Agency refers to the ability for men and women to exercise equal decision-making powers over important livelihood decisions therefore reflecting an ability to make choices and act

upon them based on personal capabilities (Kabeer 2010; Kabeer 2001). Agency is therefore inherent in discussions about bargaining and intra-household dynamics more broadly. The failure to address the underlying factors sustaining gender inequities can be related to strategies focussing on the household as the primary unit of intervention (Njuki et al. 2013). It is now widely accepted across various disciplines that the unitary household model obscures the complex and contextual decision-making factors that determine outcomes of gender-related interventions (Quisumbing 2003).

However, even though women's participation is a key objective for many donors, in practice, donor-driven activities still assume a homogenous household represented by members with unitary interests to which the costs and benefits of interventions accrue (Joekes et al. 1996). The degree to which women can adopt environmentally efficient technologies, or effectively participate in NRM schemes is subject to processes of negotiation and conditioned by the societal norms that reflect gendered bargaining powers (Jackson, 1993), especially in contexts where men reap the benefits (Jackson 2007; Rocheleau & Edmunds 1997). Examples from agriculture show how programs that increase productivity and commercialisation can instead transfer women's productive resources (livestock) and agricultural produce (milk and crops) out of their control. Frequently cited consequences of neglecting intra-household power dynamics in asset or income-building interventions include reductions in household nutrition levels and women's overall income management (Kristjanson et al. 2010; Njuki et al. 2013).

The above review illustrates that application of gender strategies has led to various unintended or ineffective outcomes. We must acknowledge however that these observations do not seek to refute the many successful grassroots collective and affirmative action initiatives, but instead to encourage an expansion of the parameters by which 'success' regarding gender integration is measured (Okali and Locke, 1999).

4.2.4 Gendered Social Norms and PES/REDD+

Drawing from these experiences, various implications emerge highlighting the need to focus on gender norms in market-based environmental approaches. Focussing on gender norms offers an attractive alternative for exploring intra-household dynamics and women's agency. Norms are no longer confined to the periphery of mainstream debates and are increasingly represented as important in efforts to achieve gender equity (Agarwal 1997; Pulerwitz & Barker 2007). Norms set limits on what can be bargained over, influence bargaining power

and also processes (Agarwal 1997). For example, in Kenya where the ownership of land, cattle and related incomes almost always falls under men's control - women's incentives to participate in and legitimately benefit from PES and REDD+ schemes may be restricted (Kariuki & Birner 2015). Therefore, the norms around how men and women negotiate over roles and responsibilities through an intra-household perspective is critical for exploring the distribution of PES and REDD+ costs and benefits (Jackson, 1993).

Because most market-based schemes are socially constructed (Muradian et al. 2010), and dependent on community involvement (Sommerville et al. 2010), the extent to which market-based mechanisms complement and constrain existing decision-making mechanisms influences both social and environmental outcomes (Kariuki and Birner, 2016). Agarwal's (2001) theory of intra-household negotiations over resource management and the influence this may have on gendered bargaining processes provides some relevant insights. For example, contractual agreements with statutory landowners (mostly male household heads) are expected to offer benefits and compensate for losses incurred by resource users. However, if decisions on how to meet regulations, or how to utilise direct payments are arrived at through a dynamic decision-making processes (Vermeulen 2002), then establishing social impacts requires an intra-household perspective. Often, PES and REDD+ serve as an extension of the social norms enforced at the community level, therefore, unless designed with intra-household concepts in mind, maintaining existing barriers to participation and "ideologically construct(ing) women as dependents and men as breadwinners" are likely outcomes (Agarwal 1997).

4.2.5 Gender Transformative Strategies

To confront the root causes of gender inequalities in NRM would therefore involve interrogating the underlying norms that mediate income and labour distribution at the intra-household level, and the gendered perceptions around any imbalances. Discussion of gender transformative approaches (GTA) as those which "actively examine, question and change rigid gender norms and imbalances of power" are becoming commonplace (Njuki et al, 2013; Fulworth and Colverson, 2015). Transformative approaches "encourage critical awareness among men and women of gender roles and norms; and they seek to challenge and address the distribution of resources and power in relationships between women and others in the community" (Njuki et al, 2013). While gender neutral approaches don't take gender into account, GTA promote "programmes that seek to transform gender norms and promote more gender-equitable relationships between men and women" (Barker et al. 2010).

Meeting transformative outcomes is anticipated to be a challenge due to the lure of sticking to politically safe agendas. This lure is characterised by various factors; i) the threatening nature of redistributing power through the promotion of justice and equity (Miller 1995); ii) the associated resistance to interfere with 'unfamiliar social variables' or engage in politically 'unsafe' agendas (ibid); and iii) the disciplinary barriers posed by conventional environmental thinking (Nightingale 2006). To validate the focus on men and women in PES and REDD+ and to overcome resistance therefore requires persuasive and strategic arguments. For example, portraying women as an undervalued economic resource is politically attractive (Tinker, 1999 cited in Miller, 1995), and continues to provide the necessary basis for targeting scarce development resources to women.

In light of this review, it is evident that available strategies for gender integration exist, however, more needs to be understood about the conditions under which each strategy may be most suited to enhance gender outcomes. The following section presents the study's methodological approach.

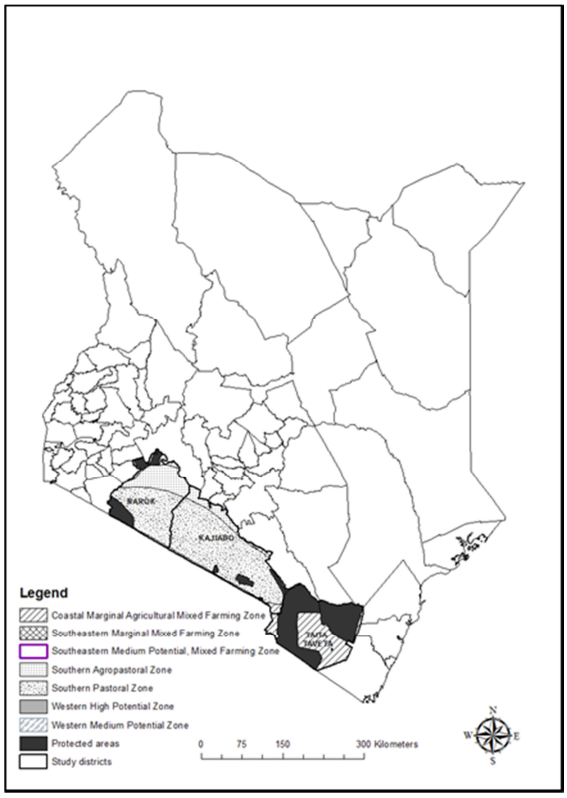
4.3 Methodology

We adopt a multiple case study approach to explore the gendered dynamics in four schemes in Kenya. Below, we present the study sites followed by a description of the research tools, sample methodology and analysis employed.

4.3.1 Case Study Sites

Research was carried out two wildlife PES and two REDD+ schemes in Kenya. Mara North Conservancy (Mara), Kitengela Wildlife Lease Program (Kitengela), Kasigau Corridor REDD+ Project (Kasigau) and the Imbirikani Group Ranch (Imbirikani). The schemes covered three counties; Narok, Taita Taveta and Kajiado (Figure 13) three of which host mainly Maasai pastoralists, while the fourth (Taita Taveta) hosts mainly agro pastoralists.

Figure 13: Map of case study sites



The cases varied according to conservation focus, rules and regulations, benefit distribution and stage of development which we summarise below (Table 11). The wildlife schemes differ in that Kitengela is donor-funded and the Mara is funded through tourism bed fees. While the Mara and Kitengela offer direct payments to landowners, the payment modes differ; Kitengela paid quarterly and Mara monthly. Payments in Kitengela were delivered at public disbursement ceremonies, whereas in the Mara, payments were made via private bank transfer. Payments were conditional upon refraining from land sales, however in the Mara, settlements and grazing within designated areas was disallowed while in Kitengela restrictions were on fencing, quarrying and cultivation.

By contrast, the Kasigau REDD+ project is funded through carbon sales validated and verified under the Verified Carbon Standards and the Climate Community and Biodiversity Standards (Korchinsky et al. 2011). Unlike the wildlife schemes, the Kasigau project is implemented on 14 ranches under different tenure arrangements where smallholder crop and livestock agriculture and large scale ranching are the main land uses. The main ethnic group are the Wataita, but also the Wadurumua and smaller ethnic groups reside. Direct payments from the sale of carbon are made only to private ranches, whereas payments to local carbon

committees (Locational Carbon Committees) are used to fund community projects coordinated through the implementing agency's Carbon Trust (Table 11).

At the time of the study, the Kasigau project was undergoing an extension to include the final site, Imbirikani Group Ranch, which would be designed to distribute benefits in the same way as the Kasigau project. Studying the Imbirikani - prior to scheme implementation presented an attractive opportunity to explore the baseline status of gendered norms particularly because of the similarities in ethnic inhabitants and the land tenure arrangement (privately owned under group arrangement).

Table 10: Site characteristics

Characteristics	Kitengela	Mara	Kasigau	Imbirikani
Type of Ecosystem Service	Biodiversity	Biodiversity	Carbon	Carbon
Status	2002 – 2012	2009 – present	2005 - 2035	N/A
Payment source	Donor	Private (tourism)	Private (international carbon market)	Private (international carbon market/tourism)
Tenure	Private	Private	Private (transition)	Private (group ranch)
Land amount (acres)	> 61,000	74,000	500,000	303,675
Main livelihood	Mainly pastoral	Mainly pastoral	Mainly agropastoral (mixed crop/livestock farming)	Mainly agropastoral (mixed crop/livestock farming)
Land-use regulations	Sale, subdivision, fencing	Sale, settlements, grazing, deforestation	Deforestation, settlement (wildlife poaching)	Deforestation, settlement (wildlife poaching)
Benefit distribution	Direct	Direct	Direct (ranches)	N/A
	USD 4 per acre quarterly	USD 1.3 per acre monthly	Indirect (community receives bursaries, education, water and health infrastructure)	N/A

4.3.2 Data Collection, Sampling and Analysis

The study solicited information on gendered norms and women's agency. To do this data was collected in two rounds. In the first round, information on intra-household decision-making, gendered labour dynamics and gendered roles and responsibilities was solicited. This information captured the agency dimension required for the study and allowed us in the second round of data collection to identify the variables necessary to explore the flexibility of gendered norms in the various sites. To explore gender norms, we asked questions about meanings of 'maleness' and 'femaleness'. Data collection and analysis was informed by principles of the Grounded Theory approach (Glaser & Strauss 2009); namely, the employment of comparative methods and the principle of saturation.

The two rounds of data served as a triangulation method to enable quality assurance. Innovative qualitative approaches across scales were employed to identify local perceptions and norms governing labour allocation, decision-making and bargaining dynamics. In depth intra-household interviews (Charmaz 2006), gender disaggregated group discussions and key informant interviews were conducted in the first round of data collection. Intra-household interviewees were randomly selected from scheme membership lists, with the exception of Kasigau where membership lists were not available warranting the use of a purposive diversity sample (Weiss 1995). Group discussants and key informants were selected purposefully to capture representative yet well informed respondents. Table 12 provides a summary.

Table 11: Summary of data collection

Method		Kitengela	Mara	Kasigau	Imbirikani	TOTAL
In-depth Intra Household Interviews (with scheme members)	♂	4	9	8	10	**62**
	♀	4	9	7	11	
Focus Group Discussion (members)	♂	2	2	1	1	**12**
	♀	2	2	1	1	
Participatory Likert Scale	♂	2	1	2	1	**12**
	♀	2	1	2	1	
Key Informant Interviews (with key stakeholders)		5	7	5	5	**12**

The second round of data collection involved 12 gender disaggregated participatory 'voting' activities conducted with beneficiaries / contract-holders. The aim was to capture perceptions of the rigidity of gender norms in each of the sites. Participants (up to 16) were presented with a series of statements regarding the norms on decision-making dynamics for income management, resource-use and labour allocation. Each statement was voted against a scale of 1 – 5 indicating strongly agree to strongly disagree. Each vote - represented by a kernel of maize – was dropped into a 'secret ballot' and at the end of each vote results were publicly tallied and discussed. Data was transcribed and analysed inductively using content analysis (Glaser & Strauss 2009) complemented through the use of qualitative data analysis software (NVivo).

4.4 Results

The results are divided into four sections. We begin with the norms on what it means to be a 'good' spouse followed by community perceptions regarding key aspects of PES/REDD+. The third section illustrates intra-household dynamics on income and labour and the final section presents a framework which is used to inform potential gender strategies based on the results regarding gendered norms and women's agency.

4.4.1 Gendered Norms and their Influence over Women's Agency

To capture gendered norms, the study asked male and female participants from FGDs and intra-household interviews to describe their definitions of a good spouse. The results generated provide an overview of how rigid or flexible gendered norms are in the respective sites and provide insights into women's abilities to exercise agency.

'Good spouse'

There were strong similarities between men and women regarding the norms of what it means to be a 'good' spouse. Both genders perceived of husbands as 'providers' and wives as 'domestic'. Both genders also cited the importance of wives conferring 'respect' to husbands and of husbands behaving 'responsibly' towards wives (Table 13).

Table 12: Results for what it means to be a 'good' spouse

	KITENGELA	MARA	IMBIRIKANI	KASIGAU
MEN				
'Good' husband	**Provider**; decision-maker	**Provider**; honest to wife/wives; should not discuss everything with wife/wives	**Provider**; responsible	**Provider**; responsible; tolerant if wife domineering
'Good' wife	**Domestic**; respect husband; 'below' husband	**Domestic**; takes responsibility in absence of husband	**Domestic**; respect husband; bestows all power to husband even if he drinks; 'below' husband	**Domestic**; helps the family
WOMEN				
'Good' wife	**Domestic**; lives harmoniously with husband	**Domestic**; respectful; looks after husband and family; ability to bear children	**Domestic**; listens to husband even when requested to conduct tasks not in their best interest	**Domestic**; lives harmoniously with husband; looks after family
'Good' husband	**Provider**; responsible	**Provider**; responsible; may let his wife work (younger generation)	**Provider**; shares wealth with family; should not impose violence on wife/wives	**Provider**; responsible; shares with family; allows wife to work so as not to be fully dependent on husband

However, at the intra-household level, perceptions of norms on what it means to be a good spouse deviated across gender and site. The deviations reflect how rigid or flexible gendered contexts are and the degree to which women can exercise agency. Women's employment and income-earning potential emerged as a recurring theme and was an indicator of gender norms and agency. In Kasigau the norms appear relatively flexible enabling women to exercise agency freely. Women respondents referred to possibilities to express free will if a husband fails to be a good provider; while men discussed their tolerance, and in some cases ability to embrace 'domineering' women who engage in activities beyond the domestic sphere, such as in employment. In the Mara and Kitengela, norms appeared more rigid in comparison to Kasigau. There was evidence of transitioning gender norms which implied a growing acceptance of women's abilities to exercise agency. Respondents from these two sites recognised that although unconventional, income-earning women are increasingly accepted within the community. An indication of transitioning gender norms in the Mara was also expressed by women who perceived that while women can be employed, men would wish to exert some level of control over women's incomes.

Responses from Imbirikani imply considerably rigid gender norms. Women discussed domestic violence toward wives who fail to meet husbands' expectations, whereas men expressed expectations of tolerance from wives 'at all costs', even in relation to husbands who engage in disruptive behaviour. These results indicate that gender norms vary according to context and can both enable and constrain women's flexibility to exercise agency which therefore has significant implications on the strategies PES/REDD+ may employ to promote gender equity.

4.4.2 Community-level Norms and PES/REDD+

The relationship between gendered norms, women's agency and PES/REDD+ was explored in the participatory voting activity. Discussants disaggregated by gender were presented with three statements and asked to express their levels of agreement across five categories, namely; strongly agree, somewhat agree, undecided, somewhat disagree, strongly disagree. The statements were: women do not need to know the amount of money received under PES/REDD+; PES/REDD+ monies are being misused and; women do not need to sit on PES/REDD+ decision-making committees. This exercise sought to understand the level of congruence between men's and women's responses and relate this to the broader implications for PED/REDD+ design. The results for each of the sites are presented below.

Kasigau

Consistent with the results on norms, the majority of responses irrespective of gender were similar implying congruence across the key statements. Most participants somewhat or strongly disagreed that women should not be represented on decision-making committees (Figure 14). The main reasons provided by men resonated with discourses of equality, while women discussed commitments to community matters. Only a minority of respondents from Kasigau 2 somewhat agreed that women need not be represented. As direct benefits were not being received by the majority of respondents, the questions on REDD+ monies did not apply.

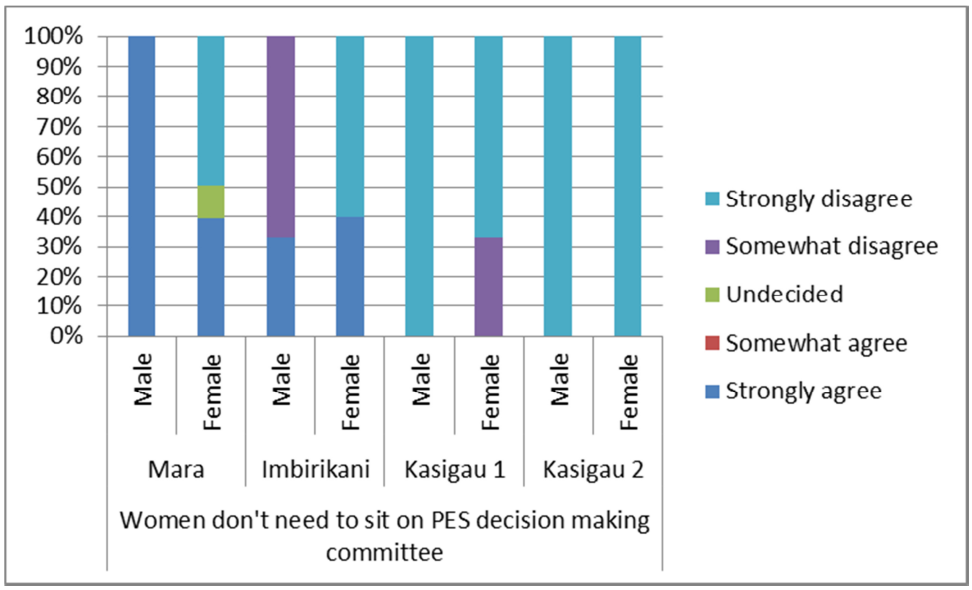


Figure 14: Gendered perceptions on participation PES/REDD+ committees

The results from Imbirikani were complex and conflicted with observations from the intra-household level. Unexpectedly, there was overwhelming support from men for women's participation in the upcoming REDD+. This was surprising given the relatively rigid gendered norms revealed in the intra-household results. Furthermore, only a handful of participants perceived no need for women to be aware of monies (Figure 15). Men discussed women's increasing engagement in employment as a justification for women's committee representation. Women on the other hand reflected on the difficulty of joining the committee given male resistance as a formidable challenge. Women discussed the outcome of an attempt to lobby for female representation on the committee which was met with strong verbal resistance from ranch members (men). The below quotes provide some rich insights.

"... the Maasais would neglect the mamas [women], they were there just to be seen, but not to be heard"

Female participant (Imbirkani)

"... For us ... we were to sit at home and wait for the husbands to come back ... If at all in the past we were never allowed to be in the Committee, what is the point of us trying now? There is no point because the mamas [women] will never win".

Elderly female participant (Imbirikani)

Mara

Responses on community representation in the Mara conflicted - all men agreed and nearly half of the women disagreed that women ought not to sit on committees (Figure 14). The divergence between gendered responses reflected an ongoing movement by a collective of women who lobbied for representation in the conservancy committee. That women were able to exercise their agency and introduce their concerns at a conservancy meeting indicates the degree to which collective action can be enabled (in comparison to Imbirikani). The extent to which women's requests were granted was however contingent on whether the executive committee would hold an election for women representatives in the upcoming months.

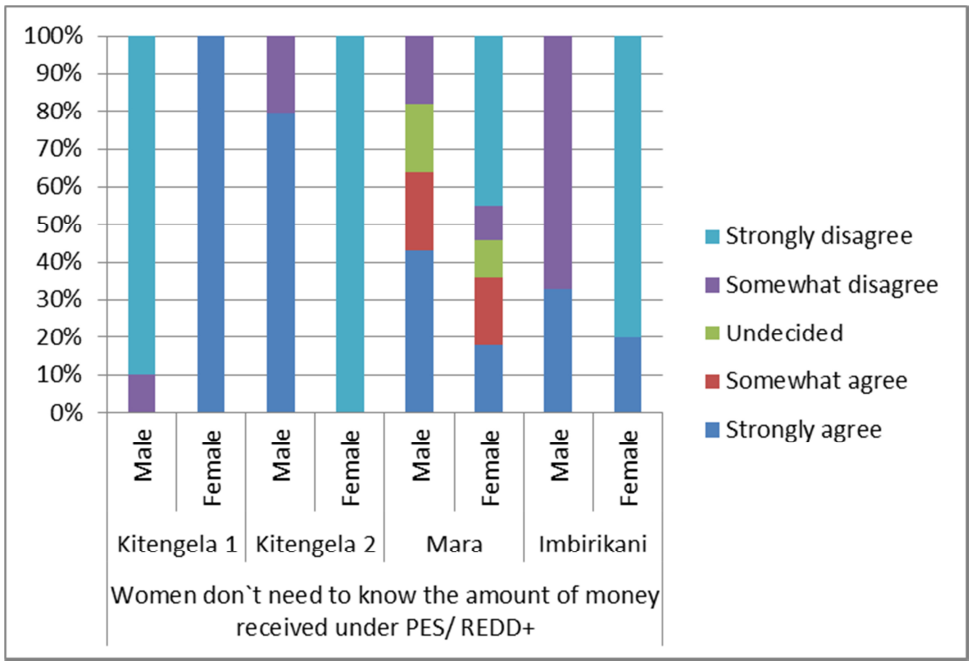


Figure 15: Gendered perceptions regarding PES/REDD+ benefits

Kitengela

In Kitengela, reflecting relatively moderate gender norms, both men and women disagreed with the statement that women don't need to know about PES monies, with the exception of the second site where the opposite results were reported. In Kitengela 1, all female respondents voted against needing to know the amount of payments (90% of men voted the opposite) (Figure 15) despite the fact that 100% of female respondents perceived monies were being misused (Figure 16). These results open up questioning as to why women 'prefer' to lack information regarding payments that they believe are being misused. One explanation offered in the discussion was that PES monies are considered minimal and were even equated to 'pocket change'. Men and women therefore perceive of PES and REDD+ differently and one size fits all strategy is unlikely to promote sustained benefits.

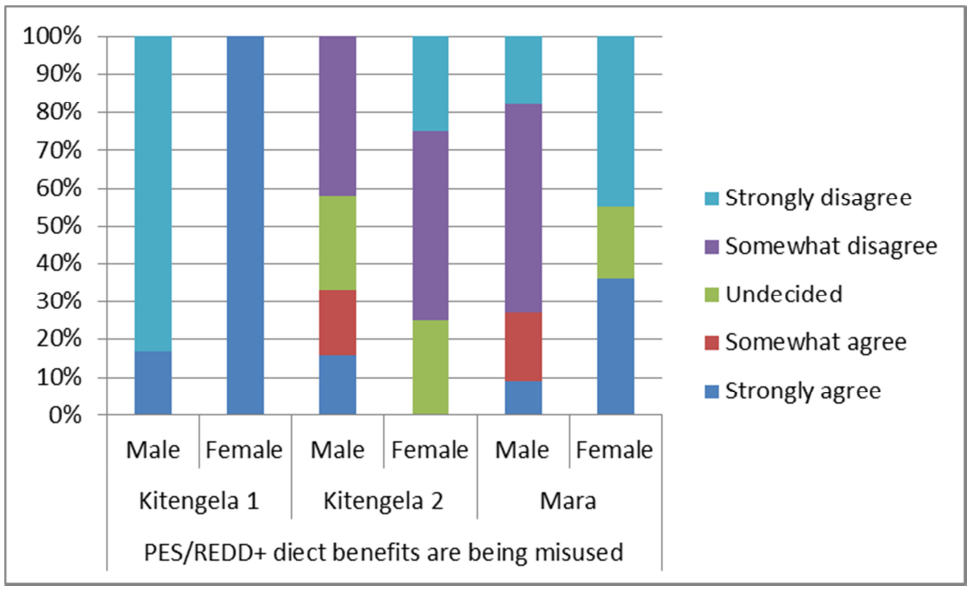


Figure 16: Gendered perceptions regarding use of PES/REDD+ benefits

4.4.3 Intra household Norms and PES/REDD+

The results so far indicate highly rigid norms in Imbirikani, considerably flexible norms in Kisigau and somewhat mixed or transitioning norms in the Mara and Kitengela. To better understand how PES/REDD+ can influence and be influenced by gender norms called for an exploration of intra-household perceptions regarding divisions of labour, land ownership, decision-making dynamics and control over benefits.

Divisions of Labour

Results on the division of labour were largely congruent with those of gendered norms regarding spouses. Men across all sites spent majority of their time outside the homestead, involved in herding and/or farming, and off-farm employment. Only in Kasigau did men spend considerably less time herding and more time felling trees for charcoal and exclusively in employment. Comparatively, women spent most of their time collecting water and fuelwood for the homestead but were also occupied with livestock herding.

The results revealed interesting insights reflecting the varying flexibility of gendered norms and associated levels of women's agency. In many cases, norms regarding women's labour were poorly acknowledged. For example, in the Mara, men often did not acknowledge women's herding activities with some stating hired herders were available. Furthermore, women's responses on employment highlighted the presence of various restrictions, particularly in the Maasai sites. This therefore also has implications on women's agency, or

men's agency over women. In the Mara, younger (more learned) women tended to have 'permission' to work, in Imbirikani only casual labour on neighbouring (family) farms was permitted, while in Kitengela there was a general level of indifference. Only female respondents from Kasigau were encouraged to seek employment and often sought trading opportunities.

Combined, the results imply that introducing any new resource-use regimes (and associated benefit streams) may have to be precluded with an exploration of long-standing norms regarding women's roles in male-oriented activities.

Gender and Land Ownership

Discussions on female land ownership were controversial and implied women's limited ownership of, and control over benefits from land-based payments (PES). Women's status with regard to land is well illustrated by the quotes below:

"We don't really have anything to do with the conservancy, it's just like before. And now we hear that people are even able to get loans, but for me, I will not be allowed because my name is not on the title… Even when it comes to selling of land, we are being told that women can also be part of the decision-but we are still never involved anywhere".

Female Spouse (Mara)

"… that's our culture as Maasai people we don't recognize women when it comes to decision making. Yes … it wasn't really the decision of anyone to decide that it's only men who can register [for land]… but it was part of the cultural law for the women not to be included... In general women had very little to do with … decisions among this community, so even the women themselves knew that even issues to deal with land disputes or land issues they were not involved in, so if there were meetings involving land they will not avail themselves whether invited or not invited".

Male Household Head (Mara)

Table 14 illustrates that with the exception of Kitengela, men exclusively attended land and PES-related meetings in the Maasai sites. It was common for women to have little to no knowledge about the schemes, and even more common in Imbirikani for women to express disinterest or resistance. Only due to the provisions by implementing agencies did women from Kitengela reveal generic understandings of land enrolled under the schemes and

associated benefits despite not being formal tenure holders. Here, public cheque disbursement ceremonies were held quarterly and women were often encouraged to attend.

Conversely, in Kasigau - where land was in the process of being subdivided - nearly half of the male respondents were agreeable to the possibility of jointly titling their land. Consequently, negligible gendered information asymmetry regarding perceptions of land ownership was captured. Flexible norms of land ownership at the intra-household level also reflected the outcome of a series of community meetings (attended by men and women) to challenge the introduction of a REDD+ restriction that would serve to curtail opportunities to receive direct benefits from a quarrying company.

Table 13: Intra household perceptions of gendered division of labour, land ownership, control and decision-making and their relationship to PES/REDD+

	Kitengela	**Mara**	**Imbirikani**	**Kasigau**
		MEN		
Labour	Mainly divided between herding / farming and off-farm employment	Mainly divided between herding / farming and off-farm employment	Mainly divided between herding / farming off-farm employment	Mainly divided between farming, tree-cutting and off-farm employment
Land	Sole ownership and occasional joint attendance at PES meetings with spouse	Sole ownership and attendance at PES meetings	Sole membership and attendance at ranch meetings	Often sole membership but joint allocation of land parcels a possibility. Attend REDD+ meetings, often alternating with wife
Control / decision-making	Main decision-maker, often consults with wife	Main decision-maker, divide between consulting and informing wife	Main decision-maker, often informs wife	Main decision-maker, always consults with wife

WOMEN				
Labour	Mainly divided between water and fuelwood collection, irregularly herds, off-farm employment permitted	Mainly divided between water and fuelwood collection, regularly herds, off-farm employment sometimes permitted (younger generation)	Mainly divided between water and fuelwood collection, regularly herds, off-farm employment sometimes permitted (casual labour)	Mainly divided between water and fuelwood collection, tree-cutting, off-farm employment encouraged (casual labour)
Land	No ownership and seldom joint attendance at PES meetings with husband	No ownership and strictly no attendance at PES meetings. Majority would wish to attend and have raised this with minor resistance	No ownership, strictly no attendance at ranch meetings. Attendance has been met with threats	Sole membership but joint allocation of land parcels exists. Attend REDD+ meetings, usually more than husband
Control/ decision-making	Main decision-maker, often consults with wife (with the exception of live chicken, eggs, milk)	Main decision-maker, often informs wife (with the exception of live chicken, eggs, milk)	Main decision-maker, often informs wife (with the exception of live chicken, eggs, milk)	Joint decision-making even on live chicken, eggs and milk sales

Control and decision-making

Control and decision-making over incomes are an important characteristic of the gendered context within which PES and REDD+ schemes are implemented. It was widely accepted that men were the main decision-makers, especially in the Maasai sites. Here, men frequently spoke of 'consulting' their wives, and wives frequently spoke of being 'informed' by their

husbands. Regarding decisions on how to use PES payments, some women from the Mara and Kitengela complained that as non-contract holders, they had limited influence over expenditures and to their knowledge did not directly benefit. In Kasigau, while female respondents could in principle manage incomes independently, more often declaring incomes and consulting with husbands on expenditures was the norm.

The results emphasise gendered norms condition participation in PES/REDD+, labour relations, asset ownership, income control and decision-making in different, but significant ways across the sites reviewed. This therefore implies that the same gender strategy would not be suitable for all the different contexts reviewed. Below we present a framework through which an analysis of the intersections between gendered norms and agency can inform strategy selection in PES/REDD+

4.5 Framework for Gender Integration in PES/REDD+

The results indicate that gender norms influence how men and women utilise land and also the degree to which they can engage in, and benefit from land-based programmes. The case study findings are used as an illustrative example to present a framework which is intended to inform gender-based strategies in different conservation contexts. The framework is divided into four quadrants (A, B, C and D) that illustrate the relationship between gender norms and ability for women to exercise agency. The cases are situated within these quadrants in an effort to demonstrate how the framework may be operationalised (Figure 17).

Quadrant A represents a context that is characterised by relatively rigid gender norms. Our results place Imbirikani within this Quadrant. Rigid gender norms are reflected by women's inability to register as group ranch members, their limited ability to exercise agency at the intra-household level (restrictive norms dictating their submission to men at all costs) and also at the communal level (thwarted attempts to participate in ranch meetings). It is important to note that agency can also be exercised to achieve negative outcomes, such as deception and manipulation through the capacity of an actor to "override the agency of others", for example, through the use of violence or threat against women or men (Kabeer, 2001).

Combined, these characteristics imply women's influence over the design and implementation of the upcoming REDD+ scheme may be curtailed. Therefore, potential exists to adopt gender transformative approaches if women's and men's perceptions are to be effectively integrated. Adopting this approach is encouraged because of the inflexible gender

context that only enables women to express their concerns under unusual conditions, in many cases fear of domestic abuse or public resistance poses a major barrier. Due to the sensitive nature of gender norms, an initial approach could be delivered under the implementing REDD+ agency's mandate to ensure gender equitable participation and consent. Existing mechanisms for this include Free Prior and Informed Consent (FPIC) as well as affirmative action policies, mechanisms that are both required to receive Climate Community and Biodiversity Alliance (CCB) Standards to trade carbon on the international market. Further mechanisms include adopting WOCANs Carbon Plus standard (W+) which consist of a set of project design and implementation requirements that complement existing certification systems and standards (WOCAN 2013b). For the GTA to be leveraged, it would appear necessary in this context to create mechanisms that incorporate men from the community. However, in the long term, for a gender transformative approach to have the desired effect - by creating an environment where social action can be meaningfully engaged in - it is likely that partnerships with civil society and government would be effective.[34]

Quadrant B represents a context whereby gender norms are relatively rigid however is distinguished from Quadrant A by women's higher ability to effectively exercise agency. According to our findings, the Mara and Kitengela are best reflected within this quadrant. The norms are rigid as women, compared to men are customarily unable to own land under the private tenure arrangements and are thus systematically excluded from attending land-related meetings and receiving direct PES benefits. Rigidness however varies according to the degree to which women can engage in, and control benefits from paid employment and PES monies. The higher ability to exercise agency is also indicated by women's successful attempt in the Mara to voice their request regarding representation on the conservancy committee; whereas in Kitengela, scheme provisions afford relative transparency to women with regard to attending PES meetings and requesting for personalised assistance regarding misuse of payments (Kariuki and Birner, 2016). An environment in which women can exercise agency (even if minimal) in the presence of male counterparts is an important distinguishing factor of Quadrant B. Therefore, as Farnworth and Colverson (2015) illustrate, gender equality reflects "women and men engaging in rational decision-making on their livelihood strategies and life choices, unencumbered by gender norms that inhibit what men and women can say, do, and be".

[34] Currently, Kenya's national constitution has seat reservations for women, however the effect of this policy has been of limited impact, especially at the local level.

Despite relatively flexible norms, a strategy that promotes some form of social action is nonetheless suitable for a conservation scheme positioned in Quadrant B. Social action may be in the form of systematic awareness creation regarding scheme benefits, land-use management systems and where possible, empowerment activities with men *and* women to raise the profile of joint-decision-making – where each gender's expertise can be leveraged for improved land management and benefit distribution. In the case of the Mara, where payments are derived from the tourism sector, efforts could be implemented through gender standards under a sustainable tourism certification scheme (in addition to existing ecological and social indicators). Such standards may be in the form of a minimum requirement for women's meaningful representation on decision-making boards; or the diversion of a share of incomes towards female and male owned productive assets. Given the relatively flexible gender norms, with suitable mechanisms in place, the risk of backlash may be minimised.

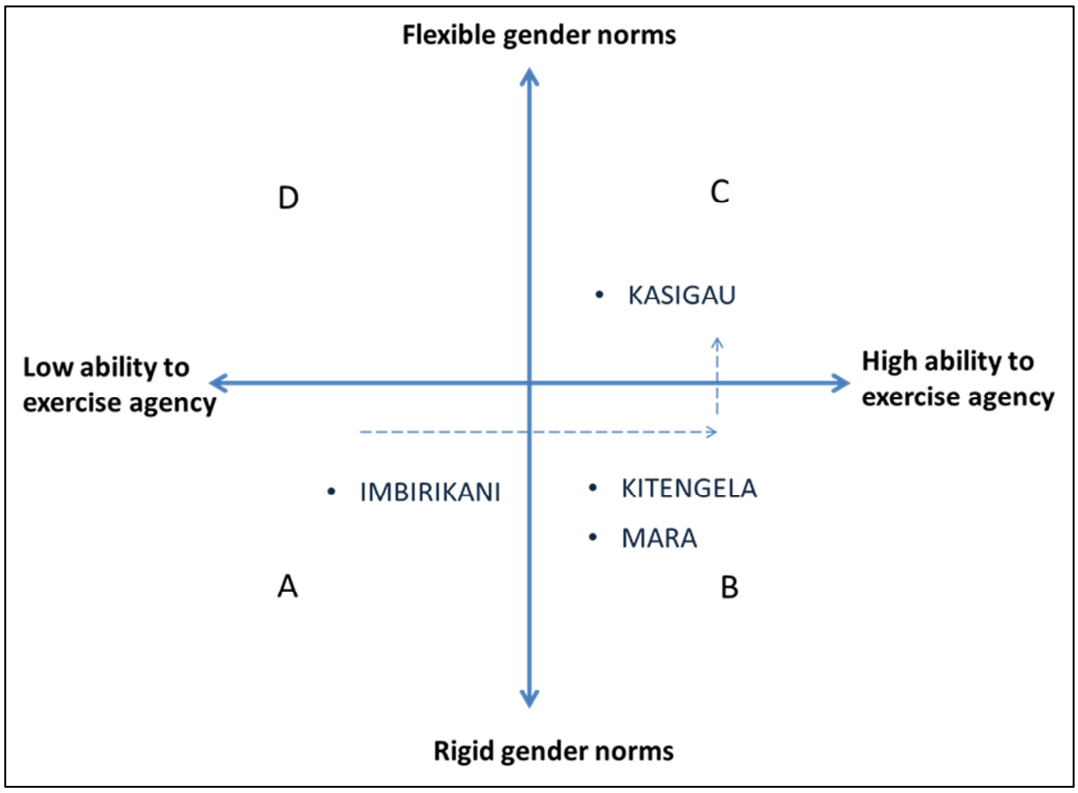


Figure 17: Framework on the integration of gender strategies in conservation schemes

The results imply that Kasigau would be best situated within Quadrant C as relative to the other sites, the gender norms are by far more flexible as is the ability to exercise agency. Here, women can be land owners, attend REDD+ meetings and exercise control over incomes through negotiation with husbands. The ability to exercise agency is emphasised firstly by the

fact that this is the only site where women are represented in decision-making committees with positions of influence. The ability to exercise agency together with that of men's is also illustrated by the joint contestation against the REDD+ restrictions regarding the project from the quarrying company. As a consequence of the more gender-balanced results characteristic of Quadrant C, a possible recommendation here is a more gender accommodating, or gender responsive approach. Such an approach would be designed to recognise and incorporate measures to sustain the existing equitable processes and could include measures that ensure principles to address any inequities such as overburdened workloads due to land use restrictions on forest use.

Our results did not uncover characteristics related to Quadrant D. This framework does not however rule out the possibility of a context where flexible gender norms do not translate into women's ability to exercise agency. Within such a context, there is scope for employing gender transformative approaches that explore and challenge the unique underlying factors inhibiting women's agency.

4.6 Discussion

The results illustrate that gendered disparities in land ownership, divisions of labour, and decision-making over productive resources reflect gendered norms and women's agency. Given the abundant literature on gender and land ownership (Peters 2009; Kalabamu 2006; Verma 2014), this section focusses on norms regarding gendered divisions of labour, dynamics of decision-making and the implications both have on PES/REDD+ design. The discussion is embedded within the theoretical concepts of cultural and environmental determinism (Spiro 2001). The interdependencies and interlinkages between the two determinisms will be presented through current debates which lend themselves to a conservation context. In particular, we explore the emerging themes from the results and discuss their implications for PES/REDD+ design.

4.6.1 Changing Divisions of Labour and the 'Crises of Masculinity'

Perceptions on employment and divisions of labour emerged as important indicators of the contexts within which women could exercise agency. With the exception of Kasigau, men were more likely than women to dwell on gendered ideals around women's domesticity whilst paying much less regard to women's productive contributions. However, at the intra-household level women's disproportionate responsibility for productive and reproductive tasks was evident. While men's disregard for women's productive contributions have been

recorded elsewhere (Horowitz and Jowkar, 1992 cited in Joekes et al. 1996), it is women's increasing engagement in conventionally male-oriented tasks such as employment and livestock herding that is striking.

A discussion that focusses on understanding the factors driving changing divisions of labour may perhaps be more relevant than one that highlights that women tend to be disproportionately affected. Changes in demography and economic necessities increase the need for women to engage in male-oriented activities. Research from Sub-Saharan Africa, shows that dwindling family labour within pastoral contexts drives women's responsibility to herd livestock, especially in the absence of hired labour (Joekes et al. 1996). While in Asia it remains customary for wives to be perceived of as domestic and confined to the private sphere, the lack of labour exacerbated by economic necessities is fast eroding the "values of feminine honour" (Sugden et al. 2014). That the sampled households from this study were not uniformly affected by changing labour demands may imply differences in the intensity of economic and demographic drivers. Scarcity of and/or limited access to natural and financial resources may necessitate women's engagement in male-oriented tasks, including entering the employment market (Khondker, 1996 cited in Sugden et al, 2014). Some argue therefore, that women's engagement may indicate that households are becoming poorer, or have access to fewer coping mechanisms (ibid). Considering the time women already allocate to tasks, regulations on resource access – such as those under PES and REDD+ - that overlook already existing divisions of labour and the surrounding norms, may further burden workloads and decrease opportunities to invest time and/or labour in other necessary livelihood activities.

That women are increasingly engaging in employment (or male-oriented tasks), also has implications on men (as was indicated in the results from Imbirikani). One argument for the conflicting results in Imbirikani and the results of transitioning gender norms in the Mara is that of a 'crises of masculinity'.[35] In Sub Saharan Africa, transformations to rural economies, social structures and household composition are seen as contributing to the growing challenges of meeting responsibilities associated with the male role of 'breadwinner' (Okali 2011; Chant & Gutmann 2005). Studies show that as relations of production shift and women enter the labour force maintaining conventional norms can be a mechanism adopted by men to affirm male identity (Pulerwitz & Barker 2007). According to this line of thinking,

[35] This is also referred to in the literature as 'troubled masculinities' and 'men at risk'

expressing ‘breadwinner’ status can reflect “men's general anxiety about the fragility of their rural livelihoods and status” (Okali, 2011; Chant and Gutmann, 2002).

That certain “models of manhood or masculinity are promoted in specific cultural settings” necessitates a categorisation of norms that may inform the design of conservation initiatives (Pulerwitz and Barker, 2008). While there are some efforts within the conservation fraternity to integrate equity using strategic ‘men-streaming’ efforts, these are by far more evident in REDD+, than they are in PES (Franks & Quesada-Aguilar 2014; Kariuki & Birner 2016). Similarly, within the agricultural sector, there are increasing calls to expand knowledge on how men manage changing realities within the context of conventional norms and the impacts these may have on men’s ability to act as full members of society. These calls highlight the need to affirmatively integrate the ‘male’ component as important for agricultural policy more broadly, but also for women’s economic empowerment in specific contexts (Okali, 2011).

4.6.2 The Role of Agency in Gender and Conservation Frameworks

Understanding the dynamics and impacts of changing gendered realities has for some time been reflected through theories of agency, often defined in reference to women’s ‘ability to exercise self-interest’. A famous theory is developed by Amartya Sen (1987) who posits that women’s limited agency reflects an internalisation of certain norms of behaviour in accordance with conventional expectations of being a ‘good spouse’. While the conventional approach is to argue that in rigid contexts women are limited in their ability to exercise free will, others argue that women leverage the limited agency they do have to employ strategic actions that secure their livelihoods. For example, at the household level, women employ a variety of strategic actions (or inactions) to ensure their security. In Bangaldesh, women assert economic control by appealing to male relatives or withholding food or labour from their husbands, strategies (Kandiyoti 1988) refers to as ‘bargaining with patriarchy’. Whereas in Mexico, women have been found to manipulate cultural norms to their advantage to gain access to land and maintain control over bee-keeping benefits (Okali and Locke, 1999). Securing male approval by representing the value of women’s productive activities as of ‘little importance’ echoes responses from the Maasai sites regarding women’s control over incomes considered ‘too small’. Therefore, a framework that enables the exploration of norms can reveal how women manoeuvre decision-making structures, and provides insights

into the conditions under which women could benefit from 'co-benefits' integrated into conservation schemes – if a project enables considerable incomes to be generated, implementers would then have to integrate specific safeguards that enable women's control over benefits while not undermining male legitimacy.

However today, it is no longer a peripheral topic, at least within the agricultural fraternity to consider the role of men when seeking to improve women's agency. As it is generally accepted that women tend to be in a worse-off position regarding asset ownership and security compared with men, the threat of household disintegration through open conflict is an unfavourable option for most women (Freidberg 2001). Meeting responsibilities can be exacerbated by environmental factors including droughts as well as environmental regulations such as restrictions on resource use. Therefore, discussions are increasingly focussing on 'safeguards' by recognising that in extreme cases, where women devote extended periods of time searching for water and firewood, the resulting delays have negative reverberations including physical backlash (Locke, 2002). A study in Kenya found that from a sample of 4,800 married women, 40% reported being victims of physical assault. The results also showed that the risk factors increasing the likelihood of violence correlated strongly with our case study sites, namely, polygamy, alcoholism, and being in agricultural or unskilled jobs (Kimuna & Djamba 2008). Any economic changes that may undermine men's traditional roles without providing alternatives, makes violence [an] … attractive option (Creighton & Yieke 2006: 6) and should therefore be considered when integrating gendered concerns in PES and REDD+.

While there is consensus on the need to reduce the barriers facing women's agency, there is much contestation on the correct mechanisms to employ. Affirmative action (Agarwal, 1994), through provisions such as gender quotas on resource-committees is often employed. However, as our results illustrate, increasing women's decision-making capacities (or their incomes) can face resistance, especially in situations characterised by rigid gender norms. Studies support the findings and show that achieving meaningful representation is hindered by various factors, including; i) the lack of functional authority within committees; ii) cultural barriers, such as "disapproval and resistance by men" and, iii) the outright neglect of legal provisions leading to male dominated committees (Sudgen et al, 2014; Locke, 2002). The potential to drive change through grassroots collective action is therefore considered effective

for increasing various aspects of women's agency as observed in Imbirikani and the Mara where different levels of success were observed.

Nonetheless, repeated and successful negotiation opens up particular areas of gender relations for questioning (Agarwal 1994; Locke & Okali 1999). Studies in India where political seats are reserved for underrepresented communities have shown that exposure to female leaders eliminates biased perceptions and challenges stereotypes (Beaman et al. 2009); all the while providing no evidence that suggests women's representation comes "at the expense of the quality of decision-making" (Duflo 2005). Ultimately, the gains of affirmative action cannot be achieved if social legitimacy is lacking. If the wider social, economic, political and institutional environment is not supportive of women's claims (including women themselves); achieving sustainable and meaningful representation will be unlikely (Okali, 2011). Calls for social scientists to identify implementable, rather than prescriptive solutions that accommodate the variability and specificity of gender relations are thus increasing (Locke 2002; Jackson, 2007).

4.6.3 Potential of the Gender Transformative Approach

Discussions on the role of gender relations point to an urgency to shift away from the conventional approaches that frame and analyse gender. Criticised for being static, traditional approaches lack the ability to generate transformative change for both men and women. Gender transformative approaches (GTA) introduce a dynamic framework that captures gendered roles and norms, and investigates how and under what circumstances these can be negotiated (Okali, 2011). According to Locke and Okali (1999), 'how' definitions of rules, rights and obligations are reinforced, re-negotiated and, on occasion, openly challenged should form the basis of gender planning. Such an approach recognises that interventions not only have different impacts on different household members, but may also trigger re-negotiation of the rules governing access to and control over resources and labour (ibid).

To achieve gender transformative outcomes, there is a need to challenge prevailing discourses, such as those that position 'men as problems and women as victims'. The main perspective from transformative advocates is that certain discourses undermine the potential of involving men as part of the transformative process and as active agents of change. These discourses fail to reflect the realities of women's lives and as our results show, very rarely do women make decisions in isolation from their male counterparts (Cornwall, 2000). Male exclusion, it is argued therefore fixes men in "oppositional sexed categories" which can

increase hostility to 'women only' projects and compromising the benefits of working together with men (ibid). The framework presented here makes an attempt to respond to these calls, and intends to facilitate the flexibility required to explore the concepts considered of increasing importance within the gender and NRM context.

Working with dynamic frameworks is admittedly challenging and the authors recognise that dealing with abstract aspects of norms and gender relations and viewing gender as a transformative process cannot be adequately achieved through 'quick fix' recommendations for action. Recording subtle elements of changing processes that may not be readily articulated and analysing changing patterns of gendered interactions can certainly be problematic (Locke, and Okali 1999). However, as the discussion illustrates, the momentum for integrating more ethnographic approaches is increasing and the potential for linking micro and macro levels credited (Locke, and Okali 1999). Ultimately, the goal should be to avoid the path dependence of "gender frameworks and interventions [which tend to] become depoliticised as they have been institutionalised (Cornwall & White 2000). 'The challenge of the future is to create societies where women's strength achieves its full potential without relegating men to insignificance' (Chant and Gutman, 2002). One possible starting point is therefore to redefine what is physically 'men's work' or 'women's work' by understanding the "context of changing economic conditions, power relations and social norms both within and beyond the household" (Friedburg, 2001).

4.7 Conclusion

It is increasingly recognised that overlooking the role of norms in attempts to promote gender equity in NRM is a major pitfall. Despite the availability of various gender strategies with which to integrate gender, NRM interventions still fall short of expectations. Within the context of more market-based approaches to NRM, what possibilities exist to better integrate gender? This study presents a unique account of the gendered norms of community members form four market-based schemes in Kenya. Recognising that gendered norms influence women's ability to exercise agency, we explore the interconnections between these two variables accordingly in relation to access to, control over and benefits from PES/REDD+. The results reveal that across the four sites, both norms and levels of agency vary which implies that no single gender strategy would be suitable to address inequalities. We therefore present a framework through which gender interventions can be selected according to the flexibility of gender norms and women's ability to exercise agency. In particular, we draw

attention to the increasingly popular, but largely unexplored gender transformative approach by providing guidance to identify the conditions under which such a strategy would be suitable to promote gender equity. We therefore stress the importance of an in depth exploration of the underlying factors that condition gender inequality within NRM contexts, without which the limitations of previous approaches may be repeated.

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5 SUMMARY OF RESULTS AND DISCUSSION

In an era where the social and economic dimensions of biodiversity conservation can no longer be ignored, emphasis on equity is increasingly being placed on emerging conservation mechanisms (Muradian et al. 2013; Halpern et al. 2013; Miller et al. 2012; McDermott et al. 2013). Despite this emphasis, little attention has been devoted explicitly to gender equity in market-based environmental approaches – an increasingly popular conservation mechanism (Westholm & Arora-Jonsson 2015; Berbés-Blázquez et al. 2016). This thesis analyses how formal and informal institutions interact with the design of market-based environmental programs to influence gender and equity outcomes. This has been done across four case studies in Kenya through the adoption of a social constructivist view (Cresswell 2009). The conceptual framework (Figure 1) illustrates the thinking behind the thesis highlighting three key areas of inquiry; namely to i) identify the broader institutional context within which actors emerge and interact to influence procedural and distributional equity outcomes, ii) establish the underlying factors for gender bias in schemes, and iii) develop a framework to guide the integration of gender in schemes.

The purpose of this discussion chapter is to highlight the emerging themes from the results and illustrate how they contribute to existing debates and filling key knowledge gaps. Using the conceptual framework in Figure 1 as a guide to this discussion section, various themes are highlighted. The first theme regards the role of unequal power relations in influencing equity outcomes. This theme reflects components A and C in the conceptual framework which is associated with the broader institutional context within which PES/REDD+ actors emerge. The second theme discusses the gendered dimensions of PES/REDD+ with respect to gendered property rights. This second theme reflects the findings from components B and C of the conceptual framework, mainly exploring the underlying factors influencing gender bias in PES/REDD+. The third and final theme discusses the potential for adopting transformative approaches to address gender imbalances within NRM contexts. This third theme reflects an effort to leverage the empirical evidence from the first two components of the conceptual framework to inform PES/REDD+ design. The Conceptual Framework adopted for the thesis is advantageous because it enabled the exploration of dynamic interactions between actors across time in an effort to establish equity and more specifically, gender equity outcomes in the selected schemes

5.1 Power, Processes and Equity Outcomes in PES/REDD+

In line with components A and C of the conceptual framework, this thesis explores the institutional contexts within which PES/REDD+ actors emerged by adopting a unique process-oriented approach. The results reveal the socio-political circumstances in which actors interact over time and their relative power over distributional and procedural equity outcomes. The findings highlight that power conditions equitable outcomes and is both relational – a characteristic between actors - and multifaceted - stemming not only from asset ownership, but also as an outcome of historical processes.

Within the broader discussion on market-based approaches, a fundamental concern is that PES prioritise economic efficiency therefore overshadowing the possibility to integrate equity into conservation planning (Pascual et al. 2014). It is argued that this overdependence on technical aspects of PES/REDD+ design may be occurring at the expense of understanding important socio-political and contextual dimensions – such as power - that influence equitable outcomes (Hufty & Haakenstad 2011). Therefore, Chapter 2 presents a relevant contribution to the literature with respect to understanding the conditions under which (in)equitable outcomes emerge (considered highly important by Berbés-Blázquez and Pascual, 2016) , but more importantly the extent to which certain components of equity (procedural and distributional) are addressed or neglected in conservation planning (emphasised by Pascual et al, 2014).

In contrast to other studies that focus mainly on efficiency and equity, Chapter 2 illustrates that power imbalances between existing actors also influences equitable outcomes. In Kasigau, power imbalances between land owning and non-land owning actors, combined with the technical 'know-how' of the project implementer was seen to skew distributional benefits (direct payments) away from the majority of landless resource users. Whereas, distributional equity based on direct payments was by far more even in the Mara compared with Kasigau based on secure and well-defined land ownership. However, it is the insights into the unique dynamics and actor motivations characteristic of the land subdivision process that provided the richest detail from this chapter. While the results support existing literature that clear and secure land rights are a critical determinant for distributional equity in PES/REDD+ schemes (Larsen et al. 2011; Corbera et al. 2011b; Borner et al. 2010; Wunder 2013), the results also offer a detailed and alternative account of land ownership not just as a productive asset, but also as a lever of power which influences equitable outcomes over time. Chapter 2 fits squarely therefore with the views of Lund and Saito-Jensen (2013) that

exploring processes and outcomes is much needed in an effort to consider the changing dynamics of social and institutional settings, such as change through legislation, or PES/REDD+ regulations; as well as local perceptions of resource users. The results also support the views of Berbés-Blázquez and Pascual, (2016) who emphasise the need for PES mechanisms that address power imbalances; and Pascual et al (2014) who illustrate why social equity in PES is necessary.

Adopting power as a unique variable for this analysis also contributes to ongoing discussions by revealing its influence over different components of equity – which like other studies (Pascual et al. 2014; McDermott et al. 2013) is conceptualised here as multifaceted. Specifically, although land tenure is strongly linked to distributional equity outcomes, the results demonstrate that it is not necessarily a prerequisite for procedural equity. In the Mara, relatively evenly distributed land and direct benefits were perceived as largely inadequate to ensure procedural equity – which was attributed to influential elite. Despite relatively evenly distributed land ownership, it was political power through leadership which was described as the largest barrier to procedural equity. The results emphasise therefore that representation influences how and for whom decisions are made. In the Mara, the challenges of representation have been well documented (Simiren 2007; Thompson & Homewood 2002). However this study begins to add to the small, but growing body of knowledge on the role of representation in Kenya's PES/REDD+ (Bedelian 2014; Atela 2015; Chomba et al. 2016).

Other PES/REDD+ studies differ from this thesis by highlighting that inequities through elite capture occurs across a spectrum from preventing free prior and informed consent (Leggett & Lovell 2012), to large scale land acquisitions, otherwise termed as 'green grabs' (Fairhead et al. 2012). Some authors therefore go beyond the work in this thesis to caution that the underlying neoliberal assumptions driving PES can marginalise not only the poor, but also the global south through market commoditisation (McAfee & Shapiro 2010; Mcafee 2012). Attention to historical processes, as is emphasised in this thesis is nonetheless significant if the needs of local resource users and conservation are to be effectively and fairly met given global conservation objectives.

To some extent, the results caution that illegitimacy and a lack of accountability within schemes risk what Pascual et al (2014) term negative equity feedbacks which are worthy of note especially because conservation goals can be undermined in the long term (Gross-Camp et al. 2012; Martin et al. 2013; Pascual et al. 2014). As such, resistance through killing

wildlife, as well as environmental movements boycotting REDD ('No Rights, no REDD) have been observed (Larsen et al. 2011; Songorwa 1999). In line with this, Chapter 2 provides empirical rigour to the view that more attention to the socio-political situation, particularly regarding historical aspects is necessary, if not mandatory when designing schemes (Kronenberg 2013; Hufty & Haakenstad 2011).

However, where power is not ensured through land ownership, the results show that social safeguards play a considerable role in influencing more procedurally equitable outcomes. As described by Chomba et al (2015), the institutional arrangement that enables the landless to make decisions on carbon-based benefits in Kasigau is therefore unique and demonstrates one means by which excluded groups can gain access to PES benefits; however, in their absence it is unclear to what extent the landless would be integrated. Reservations regarding how effective and enforceable social safeguards are in the long term therefore emerge from the findings and echo existing discussions. In particular, the lack of agreement on the priority of carbon versus non-carbon (social and equity) values has meant that in the absence of certification, the level of safeguard standardisation remains undecided (McDermott et al, 2013). Other views are based on evidence that non-carbon values are critical to support legitimacy and effectiveness of REDD+ therefore should not be unenforceable guidelines, but should instead be mandatory prerequisites (Visseren-Hamakers et al. 2012; Phelps et al. 2010). A further argument refers to the inadequacies of social safeguards to tackle the underlying drivers of inequity, especially in gendered contexts (Westholm and Arora-Jonsson, 2015) – a discussion the thesis will address in more detail in an upcoming section.

The results form Kasigau concur with Chomba et al (2015) and provide critical evidence that social safeguards must be carefully tailored to suit different land tenure arrangements to promote at least some form of equity regarding local-level benefit distribution. The potential for PES to address the underlying drivers of biodiversity loss is however called to question because of its inability to address uneven land tenure (McElwee 2012), and thus maximise distributive equity. The results on the dynamic processes that led to land distribution in the two sites highlight that addressing the drivers of biodiversity loss requires addressing the multiple complexities of land tenure, governance and gender considerations when developing and implementing projects and action plans (ibid). Based on the complexity of addressing power imbalances, a contrasting observation from that in Chapter 2 is that addressing weak domestic laws (which represent the principal barrier to ensuring equity) should be the principle "target for change" rather than prioritising improved design of mechanisms for

benefit flows (Wily 2011:733). This is a debate the thesis will address towards the end of the discussion (Section 7.13).

5.2 Recognising the Uneven Playing Field from a Gendered Perspective

Chapters 2 and 3 address components B and C of the conceptual framework with regard to the factors influencing gender and equity in PES/REDD+. Chapter 2 identifies the power dynamics that condition procedural and distributional equity outcomes in PES and REDD+ schemes. Chapter 3 focusses on the power imbalances that influence equity outcomes with regard to gender as a category of social differentiation. The results demonstrate that women were largely excluded from the schemes reviewed, especially with regards to equitable participation in decision-making (Mara) and in receiving direct benefits (Kasigau). It is evident that unevenly distributed conservation payments reflect outcomes of land subdivision processes that excluded women. However, as recognised by Bedelian, (2014) and Silvestri et al. (2012), very few in depth studies assess the role of PES/REDD+ on women *and* men and the implications of gendered resource use patterns. These findings therefore suggest that attention to gendered impacts of market-based schemes warrants further attention.

Chapter 3 thus provides a useful addition to the literature by focussing in depth on the underlying factors influencing gendered inequities across scales from the community, intra and inter household levels. Although not widely reported on, some authors accept that gendered concerns in conservation are largely neglected. Blaikie's examples from decentralised conservation approaches in Africa reveal the tendency to 'black-box' the local level in order to render it more 'manageable' (2006: 1953). 'Black-boxing' eclipses the social differences (such as gender and wealth) between and within households and serves to obscure the broader politics that control inequalities (ibid).By capturing the community, intra and inter household dynamics, Chapter 3 revealed largely neglected insights which are described below with respect to gendered land ownership and the uneven distribution of costs in biodiversity-rich contexts.

The primary finding from Chapter 3 was that across three reviewed cases, gendered membership in schemes was between one and two percent. These results echo Bedelian's (2014) findings on a neighbouring conservancy in the Mara, where only 3% of women were members. The main reason cited for exclusion was a lack of formal land tenure. These findings are congruent with records showing that during privatisation women were not entitled to land, especially in Kenya's former communal lands (Talle 1988). Exclusion is thus

often attributed to the imposition of former colonial land policies that echoed the patriarchal nature of land ownership in England (Verma 2014).

The cross comparison of results from Chapter 3 are particularly unique by virtue of providing evidence to suggest that women's exclusion is also a reflection of dominant socio-cultural norms in the Maasai culture, that are potentially less pervasive in Taita Taveta (Talle 1988). This would explain why there was less resistance to women's participation in land-related matters in Kasigau and the (sometimes favourable) consideration of respondents for the joint land titling between husband and wife.

The results from Chapter 3 are also relevant to the extent that they demonstrate the gap between gender rhetoric and gendered project practices in NRM contexts. This is an area of research that has not been exhaustively explored within PES/REDD+ although some exceptions are worthy of note. Corbera et al. (2007), for example, refer to the dominant influence of traditional male-oriented decision-making institutions in Mexico, which may be akin to the dominant role of land use committees in the Mara. Corbera et al (2007) illustrate that placing responsibility for carbon PES under conventional and gender-blind institutions further entrenches local processes of gender exclusion. The thesis' results on limited gender integration in programming also speak to various organisational aspects. Ogra (2011) identifies key barriers to the meaningful integration of gender in conservation programmes more broadly. These barriers include perceptions of gender as a "secondary issue" in conservation; a lack of empirical research on key gender and wildlife issues; ambiguities about what gender means and limitations in the number of opportunities to discuss gender equity.

Chapter 3 presents a unique contribution to this area of scholarship through its provision of qualitative insights into gender differentiated costs under PES and REDD+ regulations. The reviewed costs were perceived by both genders as inadequately compensated for under any of the respective schemes. Livestock predation, crop raiding, and shrinking pasture availability presented considerable, but differentiated costs for men and women from the study sites. The results showed that it was more likely for men to incur income related costs, and women, labour related costs. To some extent, the results confirm findings from other qualitative studies that explore gendered costs under conservation schemes, but the fact that this study captures the distribution of costs at the intra household level introduces a much less researched aspect to the conservation literature. Conventionally, gender concerns in

conservation research often refer only to women where findings illustrate women's increased labour allocations as a result of conservation schemes (Nabane 1996; Songorwa 1999). Therefore, Chapter 3 contributes to a thin existing literature by demonstrating that men, like women also incur income costs, and that men are more likely than women to engage in risky behaviour.

A considerable, but by no means exhaustive body of literature regarding gendered costs in conservation can however be found in discussions on human-wildlife-conflict (HWC). Crop and livestock-based agriculture are often in competition, rather than compatible with biodiversity conservation, therefore the study's results can greatly complement findings from HWC studies. HWC studies show that wildlife attacks on humans and crop-raiding events are common around protected areas. Capturing representative opinions from men and women on HWC is therefore encouraged by some as a useful approach to understand the extent of wildlife-related losses, given gendered labour relations (Treves et al. 2006). The literature reveals that gendered roles and responsibilities are strongly correlated to actual and perceived costs of interactions with wildlife. In the Maasai Mara region of Kenya, Kaelo (2007) reveals that men are significantly more vulnerable to attacks from elephants than women, and have a 50% chance of survival compared with women who have a 40% chance of survival. This is attributed to gendered roles of men herding livestock and their higher likelihood of walking at night (alone). Treves et al. (2006) and Nabane (1996) also find that men were more likely than women to complain about elephant damage. Regarding crop losses, perceptions through a ranking of problem animals and vulnerable crops differed distinctly according to which crops men and women laboured on the most (Treves, 2007). However, results imply that women-owned farms are more vulnerable to raids because of a lower likelihood to invest in crop-raiding buffers compared with their male counterparts (ibid).

What is missing from these insights on HWC, but is described in Chapter 3, is a richer analysis of the gendered impacts of wildlife-related losses. These findings begin to support those from a unique study by Ogra (2008) which reveals that often, the tendency is to only account for monetary costs, and neglect the hidden costs of HWC. Resonating results from this thesis, her study shows that even though men and women are affected by HWC, women are responsible for bearing most of the 'invisible' costs (uncompensated, delayed, psychological in nature) compared with men who are responsible for bearing the visible (economic; immediate) costs. Invisible costs observed in her study include demands for cash from men due to lost fodder, night-guarding, psychological trauma and fear of death.

Collectively, the results show that the value of adopting a gendered (feminist political ecology) approach provides empirical evidence that men and women incur wildlife related costs thought are worthy of compensation. In the studied cases, gender blindness is demonstrated in the exclusion of livestock important to women from compensation schemes (donkeys and poultry). The study's findings therefore reinforce those of Ogra (2011) who argues for the need to increase the gender sensitivity in programs where men and women incur different wildlife related costs.

The results on the gendered distribution of costs are particularly relevant because they provide empirical evidence related to a number of broader concerns in the PES literature. These concerns reflect that neglecting gender undercuts the potential for PES in various ways. Firstly, there is overwhelming evidence that men and women occupy different productive spaces and thus interact differently but significantly in wildlife and forestry contexts (Rocheleau & Edmunds 1997; Hunter et al. 2011). Despite this evidence, Corbera et al (2007) highlight that gender neglect in PES limits the potential for ecosystem service markets to smooth inequalities within and across households. Smoothing inequalities may not be the primary function of PES, however it does represent an important component for promoting effective natural resource management (Vatn 2010). Secondly, to ensure successful ecosystem management requires the full value of ecosystem services for livelihoods to be captured, recognising men's and women's roles as resource users is therefore deemed necessary (Smith & Scherr 2003). Thirdly, if the rationale behind PES is to compensate resource users for lost economic opportunities (opportunity costs principle), overlooking the costs incurred by women therefore undermines the fundamental principles of the PES concept. Ultimately, efforts to limit the unequal distribution of costs and benefits are encouraged to avoid chances of conflict or resistance that may undermine the overall conservation objective (Songorwa, 1999).

5.3 The Role of Informal and Formal Institutional Interplay

Reflecting components B and C of the conceptual framework, Chapters 2 and 3 highlight the factors influencing gender exclusion in PES schemes particularly in relation to land tenure as a barrier to distributional equity. The extent to which conservation approaches can address inequitable outcomes is also discussed in relation to adhering to social safeguards. However, the study's findings imply that conservation initiatives, their design and implementation are at a cross roads with respect to how best to address matters of inequity. Should conservation approaches seek to maintain locally rooted, yet unfair distributive and procedural equity or to

establish mechanisms that evenly distribute costs and benefits, and are inclusive but also challenge the status quo (Corbera et al, 2007)? As the status quo is unevenly distributed land (formal institution of tenure) between men and women confounded in certain contexts by rigid gender norms (informal institution of customs), what can be learned from efforts to reconcile the inconsistencies between formal and informal institutions? To understand this, we first discuss the evidence on integrating gender at the project level. We then show how the interplay between formal and informal institutions may affect gender outcomes at a national level. The implications of this interplay are then discussed in reference to Chapter 4 which presented a framework to guide the integration of gender in PES/REDD+ and conservation.

5.3.1 Gender Integration at the Project Level

Given unequal land ownership and calls to broaden definitions of property rights (Chapter 3), interventions seeking to integrate gender in PES/REDD+ are often restricted to project-level designs. Except for Kasigau (and to some extent Imbirikani), our results illustrate no explicit effort to integrate gender in the reviewed scheme. Examples from around the world do show that gender integration can occur through direct targeting to reduce women's barriers to participation (Shames et al. 2012), gendered benefit distribution mechanisms (Gutman & Davidson 2007; Turpie et al. 2008), creation of new platforms from which women can engage in PES-related activities (FAO 2011a) and gender mainstreaming throughout the project cycle to enable the achievement of important livelihood-related benefits for both men and women (Shea et al. 2005).

However, there are reservations regarding the extent to which addressing inequities through projects may actually inflict harm (Pascual et al, 2014). Chapter 4 describes that sticking to politically safe agendas and refraining from challenging the status quo, is therefore often the norm in both conservation and development approaches. This helps explain why quite a narrow diversity of approaches for gender integration have been adopted. This evidence is important within the PES/REDD+ equity discussions because it demonstrates that formal and informal institutions sustain unevenly distributed resource tenure and remain a fundamental constraint to meaningful gender integration strategies.

5.3.2 Gender-sensitive Land Redistribution?

Acknowledging the interlinkages between all the components in the conceptual framework is considered important for this study. The results strongly emphasise the constraints formal institutions such as land ownership pose for gender integration in PES/REDD+ and

acknowledges the often limited ability for implementing agencies to limit these constraints. Some observers insist therefore that the priority for addressing inequities in PES/REDD+ contexts is tenure reform and not improving market-mechanisms (which to a large extent this thesis attempts to promote). We revisit therefore the view from earlier in this discussion (Section 5.1), that weak domestic laws are the principal barrier to PES/REDD+ participation and should therefore be the "target for change" (Wily, 2011: 733). Adopting the role of the 'devil's advocate', what would such an approach look like? What examples exist through which we can glean insights?

Examples of successful redistribution of land with respect to positive gender equity outcomes are few. While no examples with direct relation to biodiversity conservation were identified by the author, there is nonetheless a wealth of positive implications for gender balanced land ownership. Ethiopia, like many other African countries, is characterised by a history of gender discrimination in property rights (Kumar & Quisumbing 2015). Despite this history, 2003 witnessed the launch of a community-based land registration process. The land reform in Ethiopia begun in the aftermath of changes instituted by a law (Family Code in 2000) which granted equal rights to men and women with respect to marriage, inheritance and property (ibid). The complementarity and sequencing of these formal institutional changes has resulted in joint certification of land and placed restrictions on the disposal or lease of land unless consent is given from both husband and wife (ibid). Whereas in Peru, where gender discrimination in property rights is less perverse, for nearly 20 years, a government-backed land reform policy has enabled joint ownership of agricultural land for men and women (Wiig 2013). This reform has been found to empower women significantly with regards to decision-making and land-related investments when compared with women in communities without titled plots (ibid).

These two cases illustrate the importance of recognising the interplay between formal and informal institutions when promoting strategies for gender equitable outcomes in land tenure. Theoretically, this also demonstrates North's (1990) theory of institutional change. North (1990) shows that some institutions change relatively quickly, such as changes in land tenure legislation from communal to private; whereas other institutional changes may take a longer period to occur, such as changing norms and customs regarding gender equality (and decision-making). These cases therefore provide a relevant account of how adopting a policy mix tailored to address formal rules and informal customs contributes towards achieving more gender equitable outcomes in two very different contexts.

These cases from Ethiopia and Peru also illustrate the need for government support with regard to land redistribution; and secondly, a systematic integration of mechanisms that recognise the local norms with regard to gender and property rights. Without government support and immense political will, the equitable outcomes from land reform policies are largely undermined. Examples from various land reform processes show government delays in issuing titles (Waswa et al. 2002 in Taita Taveta Kenya; Larsen et al. 2011 in Nicaragua regarding REDD+ tenure), and unevenly distributed outcomes due to unequal levels of bargaining powers (Borras 2003 on Market-Led Agrarian Reform in Brazil, Columbia and South Africa; Whitehead & Tsikata, 2003 on gendered land reform in Africa). But for any significant impact on gender relations, the land reform agenda must engage with informal institutions (Nyamu-Musembi 2006; Whitehead & Tsikata 2003). This is especially the case where rigid gender norms pose considerable threat to proposed government land reform due to resistance (Columbia, 2011 cited in Wiig, 2003; Varley 2010); which may inadvertently lead to adverse effects on women (Katz, 2010 cited in Kumar and Quisumbing, 2015).

But is it feasible for a PES/REDD+ project to achieve this? Most likely not. What does appear feasible is collaborating with civil society on matters of national interest that affect natural resource use and community benefits. This has been witnessed with the policy advocacy work of the Kenya Wildlife Conservancies Association which successfully drafted a new Kenya Wildlife Act which was passed in 2013. This Act is important because it legalises financial compensation for wildlife related losses, which to a large extent may begin to acknowledge (inadvertently) that women and men incur losses. Partnering with civil society organisations has also proved effective, for instance through AMREFs work on women's alternative rites of passage in pastoral areas which tackle the informal institutions that contribute to gendered inequities in many of Kenya's pastoral biodiversity-rich contexts. While neither of these programmes is designed to address land redistribution they nonetheless begin to tackle a number of factors deemed necessary to promote more gender equitable outcomes in conservation.

5.4 The Potential for Gender Transformative Approaches

So far the discussion has demonstrated the challenges and resistance to address gendered inequities in PES/REDD+. However, what appears to be missing from the wider NRM literature is a concise account of available options for promoting more gender equitable outcomes in land-based conservation projects. In this respect, Chapter 4 is particularly relevant. Here, the emphasis is on a deliberate analytical approach to understand how social

norms and women's agency act as a barometer to inform the selection of gender strategies in PES/REDD+. The authors have found no explicit reference to the role of gender norms and agency in PES/REDD+ and therefore consider Chapter 4 a novel contribution to the literature.[36]

Chapter 4 adds empirical weight to the growing consensus that more effort is required to understand the underlying reasons for gendered resource access constraints, especially in contexts where gender inequity is so pervasive. This chapter therefore joins a growing number of authors who argue that attempts which respond directly to "visible inequalities" (such as women's low income or their limited asset portfolio) are not only inadequate to address gendered inequities, but can also create "the inverse situation" (Farnworth & Colverson 2014). For example, given the very rigid gender norms in Imbirikani, it is unlikely that an asset-building scheme will automatically improve women's welfare, unless men are systematically integrated (consulted) and specific safeguards are implemented. In agricultural development when visible inequalities are observed, the immediate solution is the introduction of income-generation schemes, or asset-building schemes (ibid). However, too frequently are there examples of women having little control over incomes generated, and 'men taking over'.

The results from Chapter 4 highlight intra household gendered power asymmetries with regard to control over incomes and decision-making dynamics. Through the lens of social norms (rather than purely economic analysis), these results therefore demonstrate the need to refrain from interventions that position men and women in oppositional groups "as being in conflict rather than in collaboration" which essentially serves to pit men and women in a zero-sum-game situation (Farnworth and Colverson, 2015). Oppositional categories can reinforce conflict rather than promote cooperation by attempts to shift relations of power from men to women (CARE 2012; Farnworth & Colverson 2014). Therefore, Chapter 4 is well situated within arguments that are increasingly promoting the implementation of initiatives that begin to challenge the underlying reasons for women's low incomes and limited control over assets.

The results from Chapters 2, 3 and 4 are that equity outcomes differ across sites, therefore so too should gender strategies. To better understand which strategies match which context,

[36] There is however a small body of literature on the role of social norms in PES (Chen et al. 2009) and environmental conservation more broadly (Kinzig et al. 2013).

Chapter 4 elaborates on exploring the intersection between the often neglected variables of gender norms and women's agency. The results highlight that understanding norms is critical within the context of PES/REDD+ because they are directly related to how PES incomes and regulations are negotiated (or not) between men and women and thus condition equity outcomes. Our results illustrate this to be so, especially with regards to Kasigau (relatively flexible gender norms with women's ability to exercise agency) and Imbirikani (largely opposite from Kasigau). Within the context of gender relations the proposed framework also argues that an emphasis on the aspect of agency is a progressive move to refocus work away from demonising men and towards understanding and challenging the informal factors that subordinate women. Chapter 4 therefore provides a unique contribution to this area of literature by arguing that a detailed analysis of agency and norms helps identify which gender strategy would be most suited and under which conditions this strategy would be deemed successful.

There are however reservations with respect to exploring norms and agency within PES and REDD+ contexts. These reservations relate to the fact that even in the agricultural context, not much evidence of the impacts of GTA exists. GTA is largely in its infancy with many agricultural research centres promoting its adoption at a conceptual stage (Farnworth and Colverson, 2015; CARE, 2012). There is however momentous buy-in from the health sector with respect to adopting GTA to improve health outcomes. Barker et al. (2010) present compelling evidence that incorporating a GTA with men and women can be more effective in transforming changes with regards to violence against women and other health-related outcomes. Barker et al (2010) demonstrate how narrowly focused interventions fail because they cannot "reach beyond the individual level to the social context". Therefore, in the health sector adopting GTA strategies that engage both men and women in critical discussions has the potential to transform harmful norms rather than narrower approaches that focus on purely visible factors (Barker et al, 2010).

Despite the Chapter's enthusiasm to incorporate aspects of agency and norms under a GTA, it is important to further explore the limitations of the GTA approach, most of which are observed in the health sector. Dworkin et al. (2015) argue that more effort is required with respect to measuring change mechanisms in GTA. Whereas, Morrell et al (2012 cited in ibid) caution that GTA must strive to avoid reductionism, especially with regard to minimising and trivialising the "complexities of masculinities to 'problematic male attitudes and behaviours, such as violence and abuse of women and children, substance abuse …'". To overcome such

limitations in agriculture at least, Farnworth and Colverson (2015) emphasise the importance of working with traditional leadership, working with men *and* women to enhance agency and transform attitudes and norms. Collectively, this discussion implies that in the long term GTA alone cannot lead to sustained changes if other factors, such as income and land ownership are not addressed. The framework therefore proposes a means by which the underlying conditions affecting gender inequalities can be more effectively explored within the project context to better inform suitable strategies.

5.5 Limitations of Methods

Both data and methodological limitations were experienced in the study. The sensitive nature of the data posed various restrictions especially with regard to soliciting information on gender norms within contexts characterized by relatively rigid customs. In certain cases, responses may have been prone to bias. For example, in Imbirikani we faced challenges identifying female respondents that would openly speak about land and related matters; in some instances we experienced resistance and reluctance to questions.

Another limitation related to intra household data collection refers to discrepancies between male and female respondents. For example, in the Mara and Imbirikani, questions about gender norms and divisions of labour addressed to male respondents yielded entirely opposite answers from their female counterparts. The main limitation here may be a bias in male responses perhaps to imply that gender norms may not be as rigid as they seem to the outsider. To address this limitation, the researchers conducted participant observation and further key informant interviews with elderly widowed women (female headed households) to observe first hand, and explore the underlying reasons for discrepancies in the data and the resistance towards discussing land related matters.

A second limitation is refers to the nature of historical data collection. For example, when conducting the Process Netmaps, there was often much discussion with regard to specific dates when events occurred. The limitations of recall approaches called for verification through desk reviews of secondary literature (triangulation) to corroborate important dates and events. As this study adopts a social constructivist approach, if dates and events did not align, results were interpreted as respondents perceptions – perceptions are considered as legitimate and part of the world view of the respondents. There were very few occasions where responses were largely inaccurate.

Methodologically, this study adopted a qualitative approach to garner in depth understandings of gender dynamics in various NRM contexts. However, there are limitations with regard to drawing generalisations given the relatively small sample size – which is often the nature of qualitative research. To control for this limitation, the study drew heavily on literature from the same or similar contexts where the data was collected. Despite this, there was very limited gender data in sites like Imbirikani and Kasigau. Another approach that was used to control for this limitation was the constant comparison approach, however, given time and funding constraints this too may present some challenges to be conducted exhaustively. For future research, the study recommends collecting gender disaggregated data across a larger sample of respondents using a mixed-methods approach.

Despite the described limitations, this thesis offers a rich contribution to an area of literature that is largely neglected. The intention therefore is to present the combination of novel methodological approaches to capture key dimensions of gender and NRM issues which may then be explored further using more quantitative approaches. The application of quantitative approaches may enable for example a study the explores the role of PES/REDD+ on the gender asset gap, or on food security both of which are critical areas for further gender research.

5.6 Conclusions and Recommendations

The purpose of this section is first to summarise the main findings and conclusions from Chapters 2, 3 and 4. A collection of principles to improve equity, and more specifically gender equity in PES/REDD+ is then presented.

5.6.1 Conclusions

This thesis set out to explore the gender equity outcomes of market-based environmental programmes in Kenya. As gendered dimensions are a neglected area of research in PES scholarship, the study adopts a innovative qualitative approach guided by the conceptual framework to conduct i) a process-oriented analysis of the institutional contexts within which actors emerge and present day equity outcomes are conditioned; ii) an exploration of gendered relations to identify the factors influencing gender-blindness in PES/REDD+ schemes, and; iii) the development of a framework which researchers and practitioners may apply to inform identification of suitable gender strategies in different PES/REDD+ contexts.

Chapter 2 concludes that more attention to the local context is required through a deeper examination of historical factors in an effort to understand the status of equity outcomes and address inequities where possible. The conclusion is arrived at through the analysis of processes over time that uncovers the series of interactions between formal and informal institutions. These interactions shape equity outcomes from the two reviewed sites. For the majority of the population in Kasigau, informal (customary) land ownership took precedence over formal land ownership (legal tenure via ranches) through a series of colonial and post-colonial land reforms. In the Mara, a highly politicised process (informal power struggles) of privatisation led to the distribution of relatively evenly sized parcels (legal tenure). In both cases there were 'winners' and 'losers' and trade-offs between the various categories of equity. Chapter 2 also concludes that the role of the project implementer in addressing at least some of the historically shaped inequities is vital. In Kasigau, the landless (men and women) were excluded from direct benefits but residual claimants of indirect carbon monies through a unique distribution mechanism. Whereas in the Mara, the landed received direct benefits (women's access to benefits depended however on intra household distributional dynamics), but were largely victims of procedural inequity. Understanding the balance of power between actors as well as their motivations can therefore provide useful insights with respect to how decisions in PES/REDD+ are arrived at and benefits distributed.

Chapter 3 concludes that it is necessary to look beyond formal regulations of land ownership if gender equity is to be genuinely integrated into PES/REDD+. The chapter promotes a broader definition of tenure also in an effort to explore the deeper factors contributing to gender blindness in PES/REDD+. That both men and women utilise natural resources differently but significantly within or neighbouring the selected project areas is overlooked if conventional tenure definitions are adopted. Women and men are therefore influenced in different ways by the rules and regulations stipulated under new resource regimes. The results reveal that PES/REDD+ regulations (eg. access to pastures and forests) have gender differentiated costs. Despite these gendered dimensions women are excluded i) from decision-making (especially in the Mara and to some extent Kitengela) due to cultural norms restricting land ownership, and ii) from direct benefit distribution (Kasigau) due to their limited legal tenure. Chapter 3 therefore determines that there is a greater need to broaden the definition of property rights beyond land ownership as the mainstream narrow definition obscures gender differentiated costs and thus excludes women (and their assets) from PES compensation.

Based on the findings from Chapters 2 and 3, Chapter 4 concludes that in none of the PES/REDD+ contexts reviewed are gender relations conditioned in the same way, and thus, no single gender strategy can be applied across all the projects. Chapter 4 explores the gap between gender theory and practice and advocates for an alternative approach with which to integrate gender in NRM projects more broadly. Situating the analysis of the interaction between gender norms and agency at its core, Chapter 4 presents a framework through which suitable gender strategies can be identified. Considering the role of men as well as women is deemed highly important if gender-balanced outcomes in NRM are to be achieved. Furthermore, the chapter concludes that the underlying drivers of gender inequity are not only material (economic), but also informal and customary. Efforts are therefore proposed to tailor strategies according to the rigidity or flexibility of gender norms stressing that further attention be devoted to this area of inquiry if equity outcomes are to be improved.

5.6.2 Recommendations

Based on these findings, a number of principles to promote more equitable outcomes in PES/REDD+ schemes are proposed below.

1. **It is essential to conduct an historical analysis that incorporates formal and informal institutions in an effort to understand the evolution of present day tenure arrangements:**

Conventionally, market-based environmental approaches prioritise economic efficiency therefore limiting the scope within which equity or social concerns can be addressed (Pascual et al. 2014; Pascual et al. 2010; Hejnowicz et al. 2014; Wunder 2013; Engel et al. 2008; Pagiola et al. 2005; Karsenty et al. 2014). Given that land ownership poses a significant impediment to participation in PES/REDD+ (Larsen et al. 2011; Corbera et al. 2011b; Borner et al. 2010; Wunder 2013), Chapter 2 provides a unique illustration of how present day land tenure is the outcome of historical processes. These historical processes are characterised by the interplay between formal and informal institutions and reflect how power differentials between stakeholders in PES/REDD+ contexts enable or constrain the achievement of equitable outcomes. Recognising the uneven distribution of power can to a certain degree inform the creation of mechanisms that in principle attempt to i) limit the influence of elites in usurping programme benefits (direct benefit distribution in the Mara) and, ii) implement more legitimate and transparent decision-making models (institutional arrangement for procedural equity in Kasigau). Acknowledging historical injustices in this way serves to

promote programme support from local resources users, which if lacking may undermine PES/REDD+ sustainability (Sommerville et al. 2010; Pascual et al. 2014). Much more attention therefore needs to be paid to understanding the pre-existing social and political processes in an effort to achieve more equitable outcomes in PES/REDD+.

2. **Rules need to be designed in consideration of the multi-dimensional nature of equity in order to address distributional and procedural outcomes, especially in contexts where land is unevenly distributed:**

Due to factors of incompatibility, attaining both social and environmental goals under environmental programmes continues to be challenging. Despite the 'fatal attraction' of PES (Muradian et al. 2013), its win-win potential is often compromised leading to trade-offs between these competing goals (Wunder 2013; Igoe & Brockington 2007; Clements et al. 2010; Brockington & Duffy 2011). As Chapters 2 and 3 clearly show, to a large degree PES can be designed at the expense of gender equity outcomes. To a certain extent though, tailor-made models can incorporate both formal and informal institutions to promote more distributional and procedural equity outcomes under PES/REDD+. Specifically, this recommendation echoes the results from Chapter 2 which showcase mechanisms that target individual aspects of equity that go some length to minimise negative outcomes emerging from a lack of formal tenure. In particular, the benefit-distribution and decision-making model in Kasigau which enabled residents without legal tenure to both receive indirect benefits and participate in decision-making despite not being legally entitled to either. These sorts of approaches reflect a key challenge in PES/REDD+ - that of how to enable significant and sustainable equity outcomes, without inflicting harm (Da Motta et al. 1999; Wunder 2013; Hendrickson & Corbera 2015). The results from the Mara with respect to women's willingness to participate in procedural aspects indicate that a 'do no harm' approach entrenches inequities because provisions to accommodate and reconcile between both formal and informal institutions are contextually lacking (Pahl-Wostl 2009: 357).

3. **Analysing intra and inter household dynamics must be prioritised if gender integration is to have meaningful influence over equity outcomes in PES/REDD+**:

Although secure land tenure is a critical criterion for PES/REDD+ participation, the results from Chapters 2 and 3 highlight that secure land tenure does not guarantee distributional (Mara and Kitengela) or procedural equity (Mara). Recognising that gender dynamics and

levels of bargaining differ across scales with respect to natural resource access and control over benefits, is therefore important (Jackson 2003; Haddad et al. 1994; Quisumbing & Maluccio 2000; Rocheleau et al. 1996). The thesis therefore emphasises the need to incorporate a broader definition of property rights beyond land ownership, to capture the gendered roles and responsibilities that condition men's and women's interactions with natural resources. In particular, Chapter 3 stresses that more effort to integrate gendered relations at the intra household level is required to account for and compensate the differential costs that men and women incur within PES/REDD+ contexts.

4. **Analysing the underlying factors that enable gender inequity is necessary to select suitable gender strategies in PES/REDD+**:

Gendered norms and women's agency are increasingly being considered as important, but often neglected factors influencing inequities in rural contexts. Chapter 4 shows that overlooking these two variables threatens to undermine the benefits of any PES/REDD+ scheme intending to achieve gender equitable outcomes. To avoid checklist approaches to gender integration in PES/REDD+ Chapter 4 therefore presents a framework to inform the selection of strategies most suitable to achieve gender equity outcomes. The framework is premised on the intersection between the flexibility/rigidity of gendered norms and women's agency. This framework is intended to guide the identification of suitable gender strategies by focussing on the root causes driving gender exclusion and inequity. However, the framework makes provisions for the fact that realistically, PES/REDD+ projects cannot be expected to solve *all* the gender challenges in a particular context. The framework therefore makes a very important distinction that allows practitioners to differentiate between the areas of intervention that PES/REDD+ can *control* versus the areas that PES/REDD+ can *influence*. PES/REDD+ implementers may for example be in a position to control various forms of gender exclusion through affirmative action policies, the implementation of social safeguards, programme level training of staff and employment of men and women. However, PES/REDD+ implementers may only be in a position to influence intra household decision-making and benefit distribution by lobbying local government and civil society organisations to implement longer term strategies that narrow the gender gap in natural resource-based contexts. Ultimately, adopting a policy mix of approaches that can address the transformation of rigid norms while meeting present conservation needs is worthy of exploration.

5. **Challenging the mainstream discourse that gender is a zero-sum game is required to promote the achievement of gender equity in NRM**

Challenging prevailing discourses, such as those that position 'men as problems and women as victims' is necessary to promote a move away from interventions that position men and women in oppositional groups. Oppositional categories can reinforce conflict rather than promote cooperation by attempts to shift relations of power from men to women (CARE, 2012; Farnworth and Colverson, 2015). This thesis argues therefore that recognising the constraints that sustain gender inequities requires working collaboratively with both men and women to deconstruct the notion that empowering one gender is equivalent to disempowering the other. A small, but encouraging pocket of examples in Kenya shows men's support for women's participation in land-based conservation is increasing in conservation contexts (Glew et al. 2010; Ewaso Lions Project; Grevy's Zebra Trust; Basecamp Foundation). Globally, we also observe initiatives such as the 'HeForShe' campaign which add momentum to the deconstruction of conventional narratives. Transforming perceptions in contexts characterised by rigid gender norms may require a tremendous effort on the part of a single PES/REDD+ scheme. However, strategic partnerships to design strategies that systematically guide the systematic navigation around conflicts between women's goals and cultural norms, does not make such an effort futile.

5.7 References

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6 APPENDICIES

6.1 Appendix A: In-Depth Intra-household Interview Guide

OBJECTIVES

1) Document successes and lessons learned from institutional arrangements of different PES schemes.

2) Explore the influence of payments for ecosystem services (PES) schemes on gendered divisions of labour and intra household decision-making, especially with regards to livestock and agricultural production.

3) Investigate local perceptions of PES schemes in relation to their effectiveness in achieving conservation goals and important welfare outcomes, taking the gender dimension into account.

RESPONDENTS

This survey is to be administered to men and women from the same household from PES contract and non-contract households.

Note
If it is not possible to meet with man and wife separately (eg. If both are home at the same time and woman cannot freely speak):

- Consider meeting with man and wife together, then divert conversation into food security questions then possibly he will leave …
- Could speak with the man then make a separate appointment with woman for a time when she plans to be out of the house (perhaps suggest a Narrative Walk)

SURVEY INTRODUCTION

Introduction and warm up (ice-breakers)

- *Offer household gift (tea and sugar) if culturally appropriate*
- *Talk about my life in Nairobi, where I have worked, my family and my interest in learning more about the respondent's culture. Can explain more about my curious ethnicity and traditional name in search for Maasai roots of its meaning etc…*

Explain purpose for interview

- *Explain purpose of PES study, objectives and offer some information on how the information collected may be used*
- *I would like to know more about the life of a Maasai / Luo / other tribe man / woman living in the area. I would like to understand their life worlds by hearing about their experiences, activities, the risks and challenges facing their livelihoods, and their hopes for the future.*
- *I am also interested to learn about these issues within the context of land, livestock and the environment (wildlife management, trees).*

Conduct

- *Establish neutrality straight away and the respondent as the expert.*

- *Let the respondent know that he / she can feel free to ask questions at any point during the interview*
- *Ensure that the respondent knows this work will be treated in all confidentiality*
- *Importance of being culturally sensitive (dress, speech, may also be required to start with a prayer).*

SURVEY QUESTIONS

*Format based on Charmaz (2006)

Start with initial open-ended questions

1. ***General context and main livelihood***

- More specifically, what does being part of culture X mean to you in terms of land, agriculture, livestock, wildlife management and the environment in general?
- Can you describe any social, environmental, economic, legal or political changes that have occurred which may have altered this culture since you were a child?

Purpose:
Offer insights into how socio-cultural dimensions and local institutions condition gendered behaviour over time.
Capture attitudes about the dominant livelihoods, the environment (and land tenure) and how these may have changed.
Provide a foundation for understanding contextual issues that have a bearing on Objective 2.

Continue with intermediate questions

2. ***Risk management***

- Describe the most threatening risk facing your livelihood. Could you expand by sharing your most recent experience in terms of the impacts of this risk and how you dealt with it.
- Could you explain if you feel that managing this risk today is any different from managing this risk in previous years? If so, why?

Purpose:
Document and understand the main challenges facing livelihoods from a gendered perspective.
Capture any perceptions with regards to climate variability and change.
Identify the extent to which (if any) approaches for biodiversity (wildlife, trees) conservation or development constrain or compliment efforts to manage threats facing livelihoods. Any differences in responses between men and women can be linked to Objective 2.
Provide the context and foundation from which Objective 3 can be assessed.

3. ***(Food security) and household welfare outcomes***

- For this to be considered a 'good' and 'healthy' home, could you explain what you important, and why?
- Describe how you and your spouse go about meeting some of these priorities. For example, who makes which decisions (and why) and to what extent are certain decisions negotiable (ie. are decisions made through discussions, or are they fixed)?
  ➔ In the context of a polygamous household, can ask respondent the same question.
- Could you describe a time or times over the past ten years where some of these needs have been difficult to meet? How have you and your spouse gone about meeting these needs?
  ➔ Explore the extent to, and conditions under which men and women have the 'choice' to take or not to take certain decisions.
- Is the occurrence of the above more or less frequent today, please explain with more detail.

Purpose:
Understand priority household welfare outcomes and their achievement through intra household labour allocation and decision-making processes (can form basis for meeting Objective 2 and 3).
Capture any links between the achievement of household welfare outcomes and external factors like development / conservation programs (provide a foundation for meeting Objective 3).

4. Knowledge of PES

- There is this scheme (XXX) of which you may or may not be a part of. Could you tell me about what you know about it, and if you are part of it, how you became involved? For example, you could describe how you came to know about it and perhaps explain the events that led up to / factors that influenced your decision to be part of the program?
  ➔ If you are not part of scheme XXX, please could you explain why (possibly relate to responses received in Question 2)?

Purpose:
Establish whether and why PES enrolment was informed or experimental (reflects aspects of procedural equity in institutional design under Objective 1 and also offers insight into how men and women understand the scheme).
Establish the extent to which PES enrolment was voluntary (for both men and women)
Explore elements of the intra-household decision-making processes around PES enrolment (Objective 2)

5. How has life changed in this household since the introduction of the PES scheme?

- Can you explain whether and why being part of the scheme relates to your culture / livelihood?
  ➔ If you are not part of the scheme, can you describe any negative or positive experiences that may be linked to the scheme which have affected your livelihood?
- Whether or not you are enrolled, what is your opinion of the scheme as compared to previous conservation approaches?

- In particular, I would like to know more about how the scheme has affected your allocation of labour. In order to meet the schemes rules and receive the payment, do you find that your workload and your ability to meet important household needs have changed in any way? For example, has it increased, decreased or stayed the same? If so, could you explain why?
- I would also like to learn more about what happens from when the payout is collected, to when it is spent? For example, who collects the money, and how its expenditure is decided upon? How do you feel about this process from collection to expenditure?
- Could you explain the main ways in which PES has impacted the environment which you depend on?

Purpose:
Capture perceptions of PES schemes in relation to trade-offs and synergies with relations of production, decision-making dynamics, conservation and development / welfare outcomes, climate change and adaptation etc (Objective 3). Establish key differences in intra-household gender perceptions.

End with closing questions

Overall experiences and thoughts on PES

- Can you describe any important and / or unexpected advantages and/or disadvantages that have emerged as a result of being part of the scheme?
  - ➔ If you are not part of the scheme could you describe any aspects of the PES scheme that that could make you want to sign up?

Purpose:
- Summarise key findings - Objective 3

Conclude

- Thank respondent for their time.
- Welcome further questions
- Adhere to local customs.

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6.2 Appendix B: Process Netmap Guide

Application: This exercise helps us to understand the institutional arrangements of PES schemes and the historical processes that led up to their establishment. Understanding various levels of actors influence can help identify the strengths and weaknesses of the institutional arrangement and may be used as part of wider efforts to improve how PES arrangements can benefit both conservation and resource users.

Resources required:

- Large sheet of paper
- Post its
- Different coloured pens
- Poker chips

Main question: How do multiple stakeholders under PES schemes influence land-use practices and to what extent do the processes associated with these schemes affect the achievement of conservation (environment) and welfare outcomes?

Key areas of interest:

- Identification of the actors involved in conservation and the processes in existence before the PES scheme was established.
- Identification of actors involved in the PES scheme and the linkages (membership, licenses, contracts, flow of funds) between them.
- The process of designing and implementing the PES scheme (land use regulations, enforcement and compliance, payout amount and distribution) and can include the process from when the contract is signed up until the payment is made and cash allocated at the household level.
- Identifying the actors influence over equitable outcomes (distribution and procedure)
- Highlighting the key challenges facing inclusivity, participation and benefit distribution.

QUESTION 1: Who is involved in the PES scheme?

- Place mapping sheet in front of participants.
- Ask participants to name all the actors involved in the process of designing and implementing the PES scheme.

➔ Actors could be formal or informal decision-makers, individuals (men and women), groups and organisations, private sector, government, NGOs, land-owners, financial services etc.

- Write every actor on an actor card and distribute the cards on the mapping sheet. Actors can be added throughout the activity.

➔ Could use different colours of card for different groups of actors (government vs private etc).

- Read out all the actors listed to enable the participants to think of any other actors. The stakeholders can also add themselves to the list (or under a certain organization).

QUESTION 2: How are they linked with regard to i) designing and implementing the PES scheme? What are the relationships / networks between the actors?

- Ask participants to describe the processes that led to the design / establishment of the PES scheme and how contracts are executed e.g. what is the first thing that happened during the

time of the group ranches? What happened after that? How are all the identified actors linked to each other with respect to these processes?

➔ At each step of the process, make a clear note on the right hand side of the sheet of paper (or on another sheet of paper if you prefer).

➔ Connect the actor cards with arrows indicating the nature of the relationship, using arrows to indicate the direction of the flow. In cases where two actors exchange more than one thing, draw a link that has a number of arrow heads of different colours.

➔ Some links of interest may include information, flow of funds, conflict resolution, membership, licenses, other services (use different colours to indicate different nature of the link).

➔ Try to focus on the most important links related to conservation and welfare, do not have more than 5, and make sure they are very specific to avoid having everyone linking with everyone.

➔ Ask for concrete examples of interactions from the start to the end of the process

- What is the strength of their linkage?

➔ A productive interaction is one that has resulted in a positive / desired outcome for both parties.

QUESTION 3: How influential are they? Influence of different actors on specified outcomes / power relations between actors

- How is influence defined? For purposes of this study, influence means the power to change an outcome / ability of different actors to influence a specific issue, rather than power in hierarchies. Come to an agreement about this with stakeholders.
- Who has the influence to ensure that contract design incorporates the needs of multiple stakeholders in the network?
- Ask the interviewee to assess who has what amount of influence to ensure that contract design and implementation incorporates the needs of the multiple stakeholders in the network by using influence towers.

➔ The more influential the actor, the higher the tower; two actors can have towers of the same size; no influence tower means the actor has no influence.

- What are the sources of influence?

➔ Sources of influence can be diverse ranging from legitimate decision-making capacity, through giving advice and incentives, to bending or breaking the rules.

- After setting up the influence towers, verbalise what you see, starting with the highest tower, eg you have given the private sector the highest tower with a height of 5 tower pieces … this allows interviewees to adjust anything they need to.

➔ Why is this actor on the highest tower? What is the source of this actors influence?

➔ These two have the same level of influence, so what happens if they disagree? Is their influence based on the same grounds? Does it have the same range?

➔ You have linked this actor to so many actors, but you say he doesn't have that much influence? Why is that so?

- Seek to understand why the powerful are powerful and the converse too.
- Ask participants to suggest ways in which the disadvantaged actors can be more empowered.

QUESTION 4: What are their goals? Governance challenges

- Whose goals are for conservation, development / promotion of agriculture and livestock based livelihoods?
- Which actors support which goals? Some actors can support multiple goals. For conflict, you could ask who is interested in continuing conflict or supporting reconciliation. For sub-division, you could ask who is interested in sub-dividing or not?

- What governance challenges/ problems have been encountered in the overall processes involved in PES that have been mapped? What are the areas that can be done better?

DISCUSSION: How to improve the situation given the results of the activity?

- What links need to be strengthened, weakened or created to improve the achievement of more equitable outcomes under the PES scheme?

6.3 Appendix C: Focus Group Discussion Guide

Introduction to the Guide

This guide is intended to introduce focus group facilitators to the qualitative data collection tools for the gendered analysis of payments for ecosystems services in Kenya. It will provide the information to assist research practitioners and focus group facilitators to:

1. Solicit information from focus group discussion participants from 4 project sites across 4 districts.
2. Compare across pre-selected indicators the key factors influencing and or constraining the benefits gained from women and men in the identified PES schemes.

Aims of this Research

The purpose of this research is to identify how PES schemes have affected in particular gendered relations of production, but more broadly, to capture gendered perceptions of the influence of PES on both environmental and welfare outcomes.

General Question

Objective: To capture what group participants understand about the PES scheme and gendered outcomes

a) Ask the group participants what they know about the PES scheme.
b) Follow up this question by asking how they found out this information about the scheme.

GENDERED DIVISIONS OF LABOUR

Objective: To learn about the contributions by household members in productive and reproductive activities directly and indirectly linked to the PES scheme. Explanations fo any changes in gender roles will be discussed as part of the activity. Identify the influence of PES schemes on gendered divisions of labour and local perceptions around these.

Resources needed

Flip chart
Flip chart paper
Marker pens of different colours (black, blue, red, green)

Duration: 2 hrs

How to conduct this activity:

a) First ask the group, prior to the introduction of the scheme, how did men and women spend their day during a typical wet season?

1) Ask the participants to describe the activities/chores that consume the majority of their time from the moment they wake up to the moment they go to sleep.

2) Place more emphasis on the activities that involve resource management (different livestock species, decision-making roles on milking, selling milk, herding, migrating, and any poultry-related activities)

b) Then, ask the group, prior to the introduction of the scheme, how did men and women spend their day during a typical dry season?

1) Ask the same questions as those for the typical wet season.
2) Follow up by asking if there are any resource management mechanisms as above.

c) After signing up to the PES scheme, ask the group how men/women tend to spend their day during a typical wet season?

1) Ask the participants to describe the activities/chores that consume the majority of their time from the moment they wake up to the moment they go to sleep..
2) Place more emphasis on the activities that involve resource management (different livestock species, decision-making roles on milking, selling milk, herding, migrating, and any poultry-related activities)

d) After signing up to the PES scheme, ask the group about how men/women spend their day during a typical dry season?

3) Ask the same questions as those for the typical wet season
4) Follow up by asking if there are any resource management mechanisms (markets, new technologies, and improved access to livelihood-related resources like water holes, institutional mechanisms such as new rules and regulations, or collective action approaches like group formation) that have enabled or constrained the amount of time and value gained from livelihood-related activities.

e) Ask the community about their activities during a drought year prior to and after joining the PES scheme.* May first have to establish an agreed year for each of the droughts.

PERCEPTIONS OF PES IMPACTS

Objective: The aim of this discussion is to explore the influence of the PES scheme with respect to gender from the community perspective. Key areas of inquiry may include:
- Natural Resource Management (better or worse and how)
- Wildlife conflict (better or worse and how)
- Access to and control over resources and cash (better or worse and how)
- Improved food security
- Improved ability to manage drought
- Links between livestock and livelihoods

Discuss perceptions of the impacts on livelihoods, welfare and the environment and identify lessons and recommendations for improvement.

Resources Needed
- Flip board paper

- Flip board stand
- If no flip board, selo tape
- Pens
- Camera

Duration: 1 hr

How to conduct the activity

1) Start by asking the group if they have been involved in the design and/or implementation of the scheme. If so, how and why?
2) Continue by asking the group 'which' aspects of the PES scheme they feel have had the greatest impact on their communities. This can also be done based on the responses that have been provided in the gendered divisions of labour activity. Impacts can be both positive and negative – we would like to capture these as objectively as possible from the perspective of the community.
3) Please make it clear to the group that we would like to focus specifically on the PES scheme and the direct (rules, regulations, payments) and indirect impacts (external factors like climate change, changes in land value and different policies like the constitution that may have occurred during the duration of the scheme) impacts that have emerged.
4) Ask the community 'what' the change from the scheme was (eg. more money, more grass for livestock grazing, less human wildlife conflict, etc).
5) Continue by asking the community 'what' the change from the project was (eg. greater access to livestock products, more money to buy food, etc). As impacts can be both positive and negative, divide the paper into 2 sections. Allocate one side of the paper to record positive impacts and the other side of the paper to negative impacts.
6) Ask the group 'who' was impacted in the community (women, men, elderly, farmers, mobile pastoralists, marginalised groups, the elite etc) and what proportion.
7) For each change, follow up and ask the subsequent change. For example if the first change was more money, ask what happened as a result of having more money. Ask what the final impacts of PES have been (eg. High milk sales by community groups → more money for women in households → more issues at the household level).
8) For each of these changes, ask question 6.
9) Ask the group to explain the pattern of proportions, why do they think that certain proportions of groups of people have been impacted by the scheme the way they have?
10) What has been the most significant change in the community from the PES scheme? Ask the group to discuss and agree on what has been the most significant change. Collect as much information on this (as a narrative as possible)
11) Ask the group which impact they felt was the most important/effective towards improving welfare impacts and environmental outcomes and mark this on the map with a narrative explanation. It is likely that much debate will occur here, so it is important to note whether group members were able to seek consensus or not, and why (also, identify which members in the group had which opinions)

    Ask the group how positive impacts from the PES scheme could have been increased. Possible answers may include a different types of rules and regulations (like more money under the contract), better coordination, better efficiency in implementation, increased community participation in implementation etc. You can use the map to identify from the different impacts, areas where communities are less satisfied by impacts of intervention and probe further.